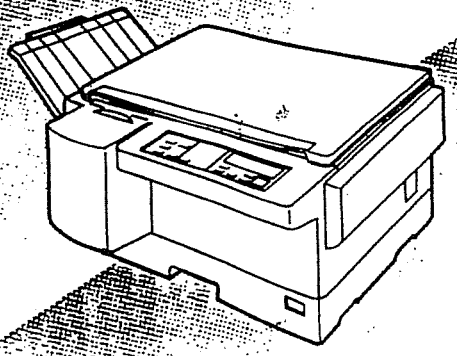
Service Manual

Plain Paper Copier

FP-7113



Panasonic

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FP-7113 Service Manual
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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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For Sweden, and Denmark

SPECIALSÄKRING: ENDAST AV APPARATFABRINKANTEN LEVERERAD SÄKRING FÅR ANVÄNDAS.

VARNING!
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL!
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Lever det brugte batteri tilbage til leverrandoren.

CAUTION!
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Section I
Introduction

1.1 Specifications

1. Type:	Desktop
2. Copy process:	Electrostatic photographic method
3. Development process:	Two-component magnetic brush
4. Maximum original size:	Ledger (11 in × 17 in)/A3 (297 m × 420 mm)
5. Copy speed:	Inch area 7 copies per minute : Ledger size 8 copies per minute : Legal size 13 copies per minute : Letter size 10 copies per minute : Letter R size 13 copies per minute : Invoice size Metric area 7 copies per minute : A3 size 8 copies per minute : B4/FLS size 13 copies per minute : A4 size 10 copies per minute : A4R size 13 copies per minute : A5 size
6. First copy time:	6.5 seconds : (Letter/A4 size) (without Auto ode) 11.5 seconds : (Letter/A4 size) (with Auto Mode)
7. Copy ratio:	Enlargement (fixed): Inch area: 1:1.41, 1:1.29, 1:1.21 Metric area: 1:1.41, 1:1.22, 1.15 Reduction (fixed): Inch area: 1:0.79, 1:0.77, 1:0.65 Metric area: 1:0.87, 1:0.82, 1:0.71 Zoom: 1.41–0.65 (1% step)
8. Copy size:	Inch area Ledger : (11 in × 17 in) Legal : (8 2/1 in × 14 in) Letter : (11 in × 8 2/1 in) Letter R : (8 2/1 in × 11 in) Invoice : (5 2/1 in × 8 2/1 in) Metric area A3 : (297 mm × 420 mm) B4 : (257 mm × 364 mm) Foolscap : (8.5" × 13"), (8" × 13") A4 : (297 mm × 210 mm) A4R : (210 mm × 297 mm) A5 : (148 mm × 210 mm)

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For U.K.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 13 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 13 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark ⓐ or the BSI mark ⓚ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR OFFICE THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

WARNING : THIS APPLIANCE MUST BE EARTHED.

IMPORTANT : The wires in this mains lead are coloured in accordance with the following code:

Green and Yellow	:Earth
Blue	:Neutral
Brown	:Live

As the colours of the wires in the main lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

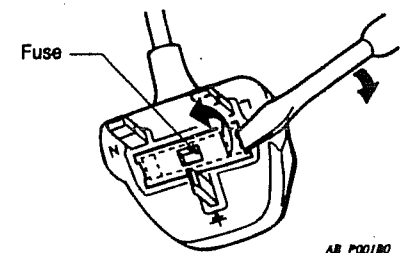
The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by letter E or by the safety EARTH symbol "⏚" or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

How to replace the fuse.

Open the fuse compartment with a screwdriver and replace the fuse.



1.3 Operator controls/Indicators

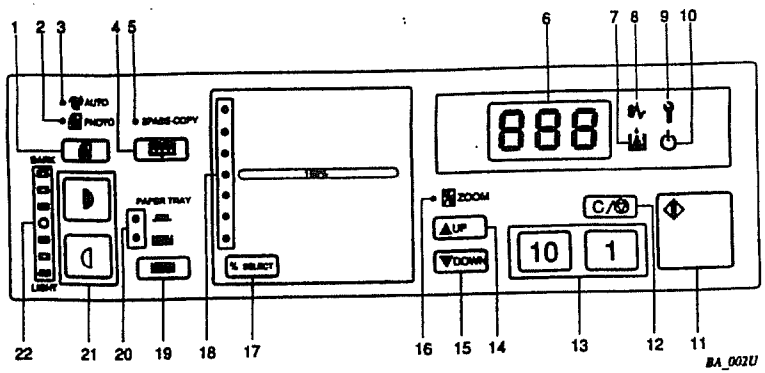


Figure 1-4-1

1. PHOTO/AUTO Mode key
When the copier is turned ON, it is automatically set to AUTO Mode. When this key is pressed, DOCUMENT Mode is selected. When this key is pressed again, PHOTO Mode is selected. When this key is pressed again, AUTO Mode is selected.

2. PHOTO Indicator
This indicator lights in PHOTO Mode.

3. AUTO Indicator
This indicator lights in AUTO Mode.

4. 2-PAGE COPY key
When this key is pressed, a ledger/A3 original can be copied on 2 separate letter/A4 pages (right and left).

5. 2-PAGE COPY Indicator
When the 2-PAGE COPY key is pressed, this indicator lights.

6. DIGIT display
This display can show the number of copies to be made, COPY RATIO, SERVICE MODE, JAM CODE and MACHINE ERROR CODE. Normally this display indicates the number of copies to be made.

7. ADD TONER Indicator
When the amount of toner in the toner hopper drops below the required level, this indicator flashes.

8. PAPER JAM Indicator
This indicator lights when the copy paper is not fed correctly, and the copier automatically stops.

9. SERVICE CALL Indicator
When the number of copies is reached for preventive maintenance, this indicator will flash.

10. WAIT Indicator
This indicator lights during warm up. A copy cycle cannot be started when this indicator is ON.

11. PRINT key
When the PRINT key is pressed while the WAIT indicator is OFF, the copy cycle starts.

12. CLEAR/STOP key
During the copy operation, when the CLEAR/STOP key is pressed once, the number of copies remaining will appear in the DIGIT display and the copy operation stops. The copy operation can be restarted by pressing the PRINT key again at this time. When the CLEAR/STOP key is pressed again, the number of copies in the DIGIT display will reset to one. The copy operation is stopped and cleared.

13. MULTI-COPY key
Keys to select the number of copies to be made. Any number up to 99 can be selected.

14. ZOOM UP key
This key is pressed when making zoom copies, (Enlargement). When the UP key is pressed once, the copy ratio is increased by one percent. The copy ratio can be increased in 1% increments by continuosly pressing the UP key.

15. ZOOM DOWN key
This key is pressed when making zoom copies, (Reduction). When the DOWN key is pressed once, the copy ratio is reduced by one percent. The copy ratio can be reduced in 1% increments by continuosly pressing the DOWN key.

9. Paper capacity:	250 sheets paper tray (front loading) + 50 sheets multi-feed bypass	
10. Paper feed:	Push button automatic paper tray + sheet bypass	
11. Paper exit tray capacity:	100 sheets : (20 lb/80 g/m²: Legal/Letter/Invoice /B4/A4/A5 size)	
	50 sheets : (20 lb/80 g/m²: Ledger/A3 size)	
12. Paper weight:	16 to 24 lb/60 to 90 g/m²	
13. Continuous copying:	1-99 automatic reset to 1	
14. Fusing system:	Heat and Pressure	
15. Photoreceptor:	Organic Photoconductor (OPC)	
16. Exposure control:	7 step digital + Photo/Auto button	
17. Warm up time:	Approximately 37 seconds	
18. Optical system:	Conventional internal scan	
19. Misfeed indication:	LED display	
20. Toner supply:	Automatic	
21. Power consumption:	Normal mode	: 100 Wh
	STANDBY mode	: 45 Wh
	Condensation prevention mode	: 15 Wh
	Power saving mode	: 9 Wh
22. Power source:	120V±10%, 12A, 60 Hz	
	220-240V±10%, 50 Hz	
23. Dimensions :	25.6 in × 23.9 in × 13.7 in	
(W) X (D) X (H)	650 × 608 × 347 mm	
24. Weight:	Approximately 72.6 lb/33 kg	
25. Ambient conditions:	Temperature : 50°F to 86°F/10°C to 30°C	
	Relative humidity : 30% to 80%	
	Noise = Standby	: 30 dB
	= Operation	: 45 dB
	Heat emission = Standby	: 130 Wh
	= Operation	: 660 Wh
	Ozone emission	: Less than 0.1 ppm
26. Accessories:	Exit tray	
	Document bag	
	Developer (except North American version)	

* Specifications are subject to change without notice.

1.2 Features

1. **This plain paper copier has been developed using new concepts.**
   - It has a new ergonomic design, which allows the copier to fit neatly in the office environment.

2. **Copy reservation function**
   - No more waiting for warm up; just position the original, enter your job instructions, and press the PRINT key. When warm up is completed, copying starts automatically.

3. **Power saving function (Service mode selection)**
   - To reduce power consumption, after the last copy is made, the power saving function is automatically turned on.

4. **Use of a front-loading mechanism.**
   - The space normally occupied by the plain paper copier has been reduced by installing the paper tray at the front of chassis.

5. **High reliability with improved serviceability.**
   - Due to an extensive pursuit of reliable performance and design concept that provides easier service, the replacement of preventive maintenance parts in each assembly has become simplified.
   - Before a failure occurs in the copier, the service mode can be used to indicate areas to be checked for servicing.
   - When a failure occurs in the copier, the self-diagnostics will indicate the area to be checked.
   - Paper jams can be easily removed from the copier. The sub-assembly design allows easy access to the copier interior and paper path.

6. **Easier operation.**
   - A dual-path paper feeding system, consisting of a paper tray (front-loading) and multi-sheet bypass.
   - The zoom function makes copies that range from 65% reduction to 141% enlargement of the original documents in 1% increments.
   - The Auto Mode provides high-contrast copies of original documents that have a colored background.
   - The Photo Mode clearly reproduces the halftones of photographs.

2. Electrical components

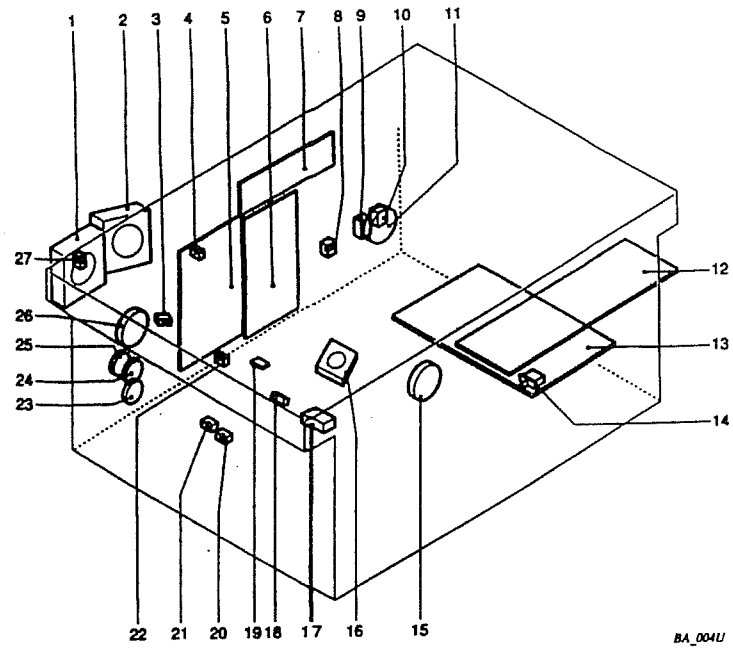


Figure 1-8-1

1. Fuser cooling fan
2. Optics cooling fan (A)
3. Blacking prevention film home position sensor
4. Half-speed unit home position sensor
5. High voltage power supply PCB
6. CPU PCB
7. Optics driver PCB
8. No.5/6 mirror unit home position sensor
9. Half-speed unit solenoid
10. Full-speed unit solenoid
11. Lamp unit scanner motor
12. Control panel PCB
13. Low voltage power supply PCB
14. Left cover switch
15. Toner supply/Blacking prevention film motor
16. Optics cooling fan (B)
17. Auto original density solenoid
18. Auto original density sensor
19. Toner density sensor (for Developer unit)
20. Timing roller sensor
21. Sheet bypass paper pass sensor
22. Paper exit sensor
23. Sheet bypass clutch
24. Paper feed roller clutch
25. Timing roller clutch
26. Main motor
27. Full-speed unit home position sensor

1.5 Copy Process

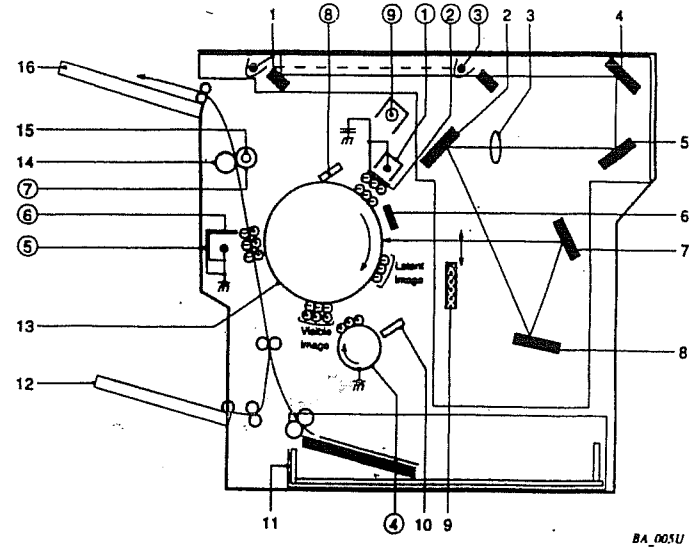


Figure 1-9-1

①	Charge corona	Approx. -4.6 kVDC	1	No.1 mirror	9	Auto original density sensor
②	Grid plate	Approx. -820 VDC	2	No.4 mirror	10	Doctor blade (BSD=0.65 mm)
③	Exposure lamp	—	3	Lens	11	Cassette
④	Magnetic roller (ø 20 mm)	Bias -250 VDC	4	No.2 mirror	12	Multi-sheet bypass
⑤	Transfer corona	Approx. -4.6 kVDC	5	No.3 mirror	13	Drum
⑥	Discharge saw	Approx. +2.9 kVDC	6	Blacking prevention film (for side erase)	14	Pressure roller
⑦	Heat roller	180°C	7	No.6 mirror	15	Fuser lamp
⑧	Cleaning blade	—	8	No.5 mirror	16	Paper exit tray
⑨	Discharge lamp	—				

16. ZOOM Indicator
When the ZOOM UP or DOWN key is pressed, this indicator lights.

17. COPY RATIO SELECT key
This key selects a 1:1, enlargement (fixed) or reduction (fixed) copy.

18. COPY RATIO SELECT indicator
When the COPY RATIO SELECT key is pressed, the selected copy ratio indicator lights.

19. PAPER TRAY key
This key is used to select a paper tray or the sheet bypass.

20. CASSETTE POSITION indicator
This indicator lights "Paper Tray" or "Sheet bypass" position.

21. EXPOSURE keys
Steps of copy density can be selected with 2 keys. When the LIGHT key is pressed, the copy density is varied in the direction of lightness. When the DARK key is pressed, the copy density is varied in the direction of darkness.

22. EXPOSURE indicator
When the copy density is manually selected using the exposure key, the corresponding LED lights according to the density selected. When the LIGHT key is pressed, the indicator moves down. When the DARK key is pressed, the indicator moves up.

1.4 Component location

1. Outer view

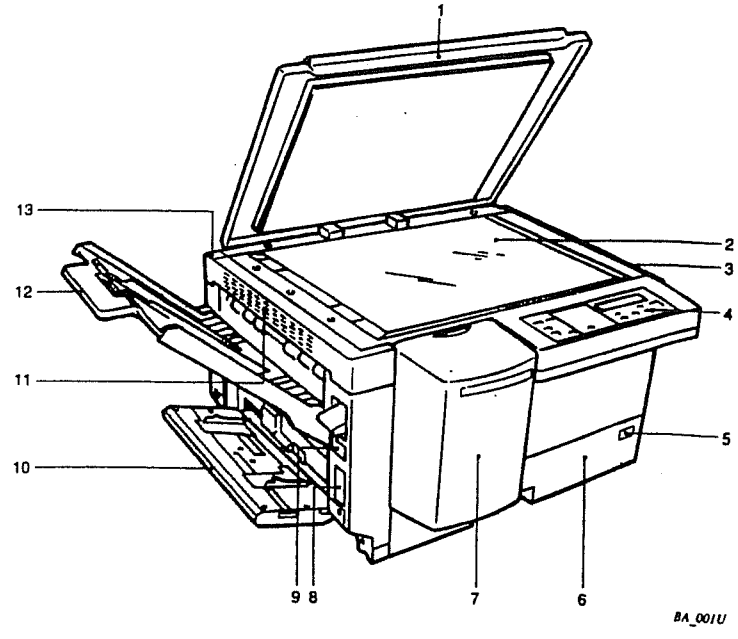


Figure 1-7-1

1. Platen cover
2. Platen glass
3. Right cover
4. Control panel
5. Paper size check window
6. Cassette
7. Toner hopper cover
8. Power switch
9. Release lever
10. Multi-sheet bypass
11. Left cover (upper)
12. Paper exit tray
13. Rear cover

Section II
Sub-Assemblies

2.1 Mechanical

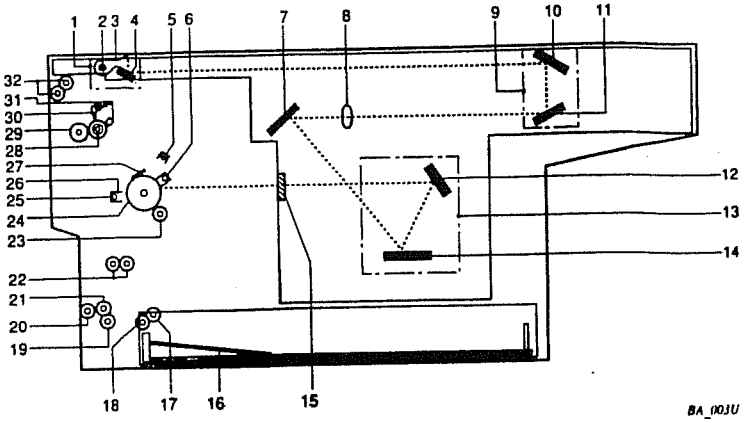


Figure 2-1-1

1. Full-speed unit
2. Exposure lamp
3. Aperture plate
4. No.1 mirror
5. Discharge lamp
6. Charge corona
7. No.4 mirror
8. Lens
9. Half-speed unit
10. No.2 mirror
11. No.3 mirror
12. No.6 mirror
13. No.5/6 mirror unit
14. No.5 mirror
15. Dust protection glass
16. Bottom plate
17. Paper feed roller
18. Double feed prevention roller
19. Sheet bypass double feed prevention roller
20. Paper transfer roller
21. Sheet bypass paper feed roller
22. Timing roller
23. Magnet roller
24. Drum
25. Transfer corna
26. Discharge saw
27. Cleaning blade
28. Heat roller
29. Pressure roller
30. Separation finger
31. Heat roller cleaner
32. Paper exit roller

2.2 Paper feed unit and Multi-sheet bypass

1. Paper tray loading/unloading operation

1) As the paper tray is gradually inserted, a protrusion on its far side pushes against the paper lifting arm. As a result, the paper lifting arm gear turns in the arrow direction.
2) The paper lifting arm gear and lifting gear rotate as the paper lifting arm rotates. The lifting spring pressure causes the lifting lever to raise the paper tray bottom plate, bringing the paper in contact with the paper feed roller.
3) As the paper tray is removed, the paper lifting arm rotates in the direction of the arrow. This causes the paper lifting arm gear and lifting gear to rotate in the reverse direction. The lifting lever lowers, causing the paper tray bottom plate to lower.

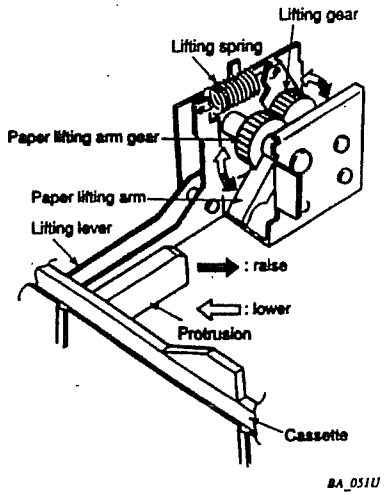


Figure 2-2-1

4) Normally, after the completion of a copy operation, a sheet of paper remains at the paper feed roller. If the paper tray is removed from the copier, the paper in the paper tray may be wrinkled or torn. The paper tray performs the following operation to prevent paper from remaining in the copier.
   - The double feed prevention roller (The roller mounted on the cassette) is lowered to separate it from the paper feed roller.
   - When removing the paper tray, the paper feed roller moves slightly, allowing the tray to be removed without wrinkling or tearing the paper.

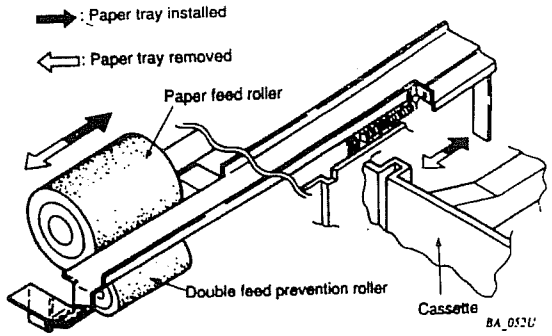


Figure 2-3-1

2. Paper feed sequence when the paper feed paper tray is selected.

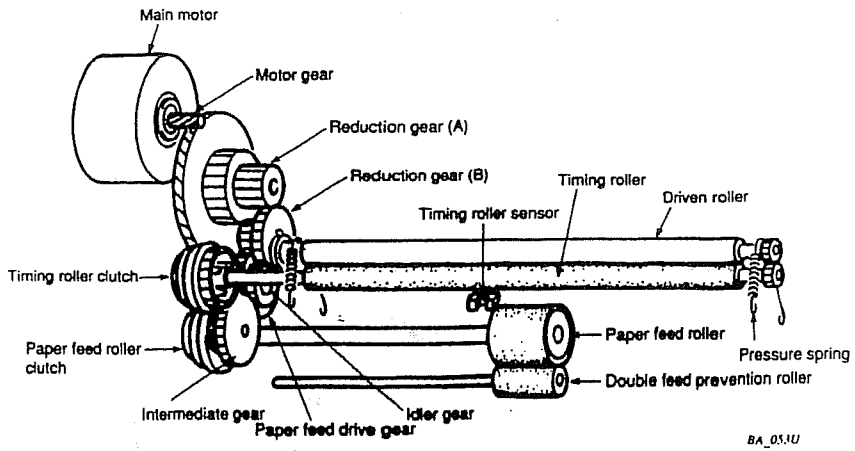


Figure 2-4-1

1) When the PRINT key is pressed, the rotation of main motor is transmitted to reduction gear (B) through reduction gear (A). The rotation of reduction gear (B) is then transmitted to a paper feed drive gear which drives the paper feed roller clutch gear.
2) The rotation of reduction gear (B) is then transmitted to a idler gear and intermediate gear which drives the timing roller clutch gear.
3) At the same time, the paper feed roller clutch turns ON, and the paper feed roller starts rotating, feeding the paper from the paper tray to the timing roller.
   Note: In the event of paper double feed, the double feed prevention roller (The roller mounted on the cassette) starts rotating in the clockwise direction to stop the lower sheet of paper from feeding. The feeding torque is determined by the torque limiter.
4) Near the timing roller is a timing roller sensor which checks the paper feed status. For a predetermined time, the paper feed roller clutch turns OFF and the paper remains in contact with the timing roller.
   - If the timing roller sensor does not detect the arrival of paper within a predetermined time, "P" (ADD PAPER) is displayed, and the copier stops.
5) Next, as the optical system starts executing its scan operation, the full-speed unit home position sensor detects the passing of the optical system; and after a predetermined time, the timing roller clutch rotates. Paper is then fed in the drum direction (the operating time of the timing roller clutch is determined separately for each paper size).
   - Paper is transported smoothly as a result of the pressure applied to the timing roller by the pressure springs located at both ends.

3. Multi-sheet bypass paper feed operation

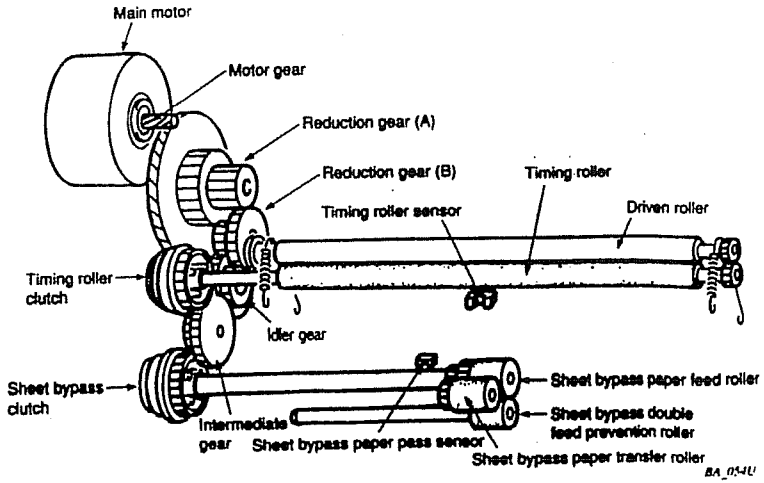


Figure 2-5-1

1) When the multi-sheet bypass is selected and the PRINT key is pressed, the main motor rotation is transmitted to timing roller clutch gear and sheet bypass clutch gear via reduction gear (B).
2) After a predetermined time, the sheet bypass clutch turns ON, the paper transfer roller is lowered to contact the paper by the torque limiter mounted on the sheet bypass paper transfer roller. At the same time, the paper stopper is released to allow paper to be fed from the bypass.

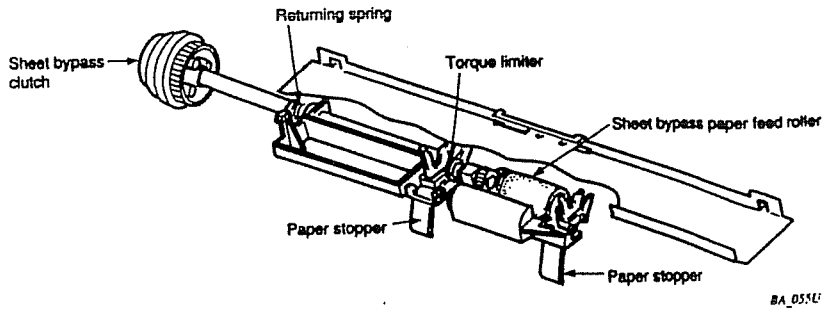


Figure 2-5-2

3) Next, the paper is fed by the paper transfer roller and the sheet bypass paper feed roller.
   Note: In the event of paper double feed, the sheet bypass double feed prevention roller starts rotating in the counter-clockwise direction to stop the lower sheet of paper from feeding. This feeding torque is determined by the torque limiter.
4) While on its way from the sheet bypass paper feed roller, the paper is detected by the sheet bypass paper pass sensor. After a predetermined time, the sheet bypass clutch turns OFF causing the sheet bypass paper feed roller and paper transfer roller to stop. At the same time, the paper transfer roller is returned to home position by returning spring
   - If the sheet bypass paper pass sensor does not detect the arrival of paper within a predetermined time, "P" (ADD PAPER) is displayed, and the copier stops.
   - If the sheet byass paper pass sensor detects the paper trail edge later, the timing roller sensor does not detect the arrival of paper within a predetermined time, PAPER JAM and WAIT are displayed, +24V is cut off, and the copier stops.

4. Paper feed unit removal

1) Removal of sheet bypass paper feed roller, sheet bypass double feed prevention roller and torque limiter
   a) Open the left cover.
   b) Curve the paper guide plate (A) and remove it.

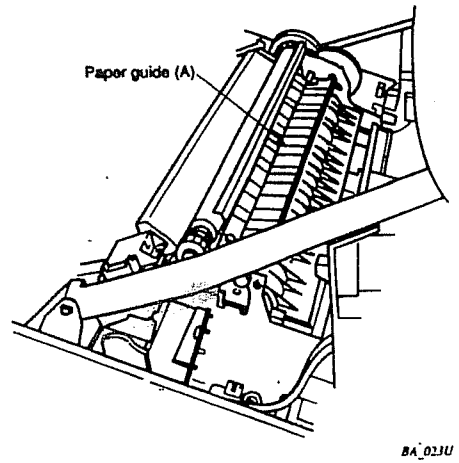


Figure 2-7-1

c) Remove the paper guide plate (B) (2 screws).

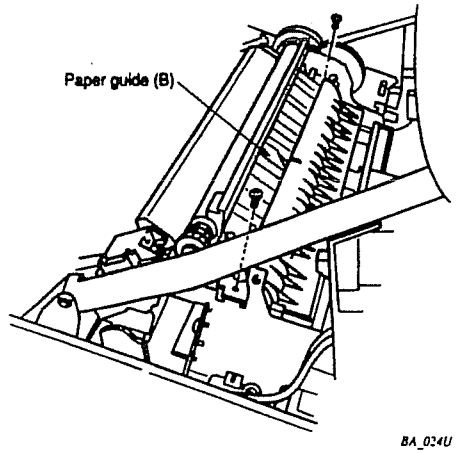


Figure 2-7-2

d) Remove the sheet bypass paper feed roller and double feed prevention roller (1 touch-ring each).
e) Remove the torque limiter from double feed prevention roller.

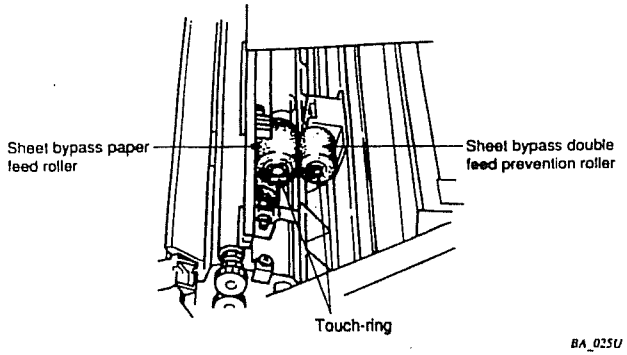


Figure 2-8-1

f) Reassemble in reverse order.
Note: One way bearing side of the sheet bypass paper feed roller goes to the rear.

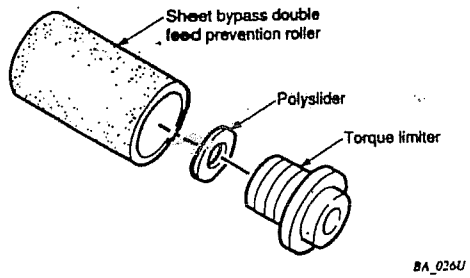


Figure 2-8-2

2) Removal of sheet bypass paper transfer roller
a) Remove the roller cover.
Note The roller cover is clipped onto the shaft as shown (X) in Figure 2-9-1. care must the taken not to bend the roller assembly when removing the roller cover.

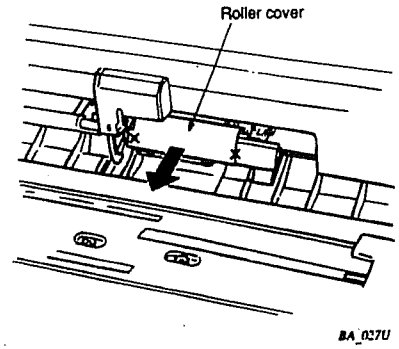


Figure 2-9-1

b) Remove the sheet bypass paper transfer roller.
c) Reassemble in the reverse order.

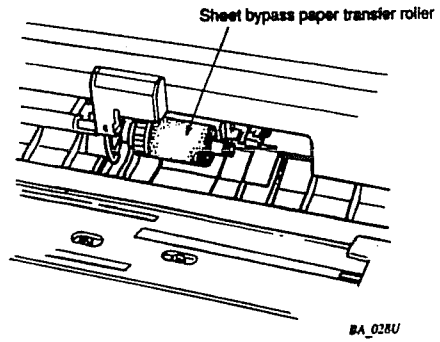


Figure 2-9-2

3) Removal of paper feed roller
   a) Open the left cover.
   b) Remove the developer unit (Refer to Developer unit removal).
   c) Lift up the paper tray and pull it out fully, raise the paper tray and pull towards you to remove it.
   d) Push the paper guide plate stoppers in the arrow direction and remove the paper guide plate.

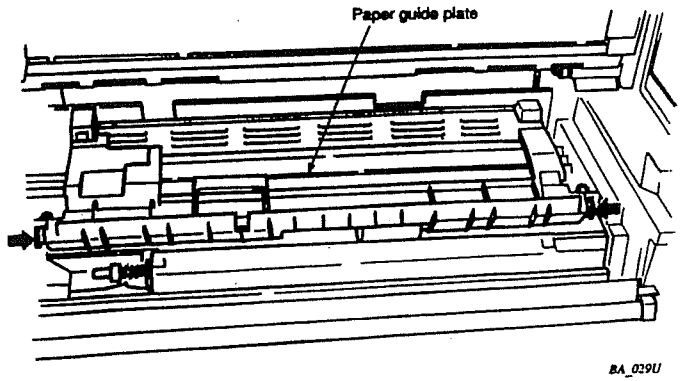


Figure 2-10-1

   e) Remove the roller stopper (1 screw).
   f) Remove the paper feed roller.
   g) Reassemble in the reserve order.
   Note: When the paper feed roller is installed, the one-way clutch on the paper feed roller is to the rear.

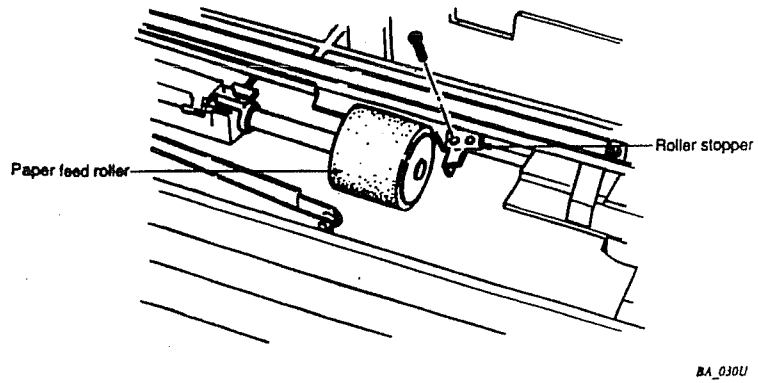


Figure 2-10-2

4) Removal of cassette double feed prevention roller
   a) Lift up the paper tray and pull it out fully, raise the paper tray and pull towards you to remove it.
   b) Remove the roller cover screws (2 screws) and push the hooks in the arrow direction then remove the roller cover..

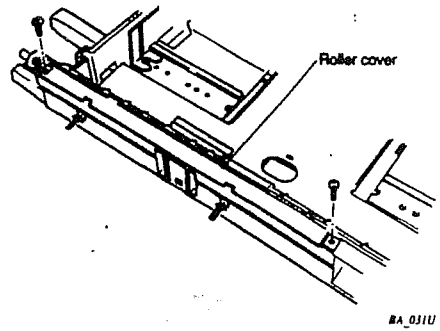


Figure 2-11-1

   c) Remove the double feed prevention roller (1 touch-ring).
   d) Remove the torque limiter from double feed prevention roller.

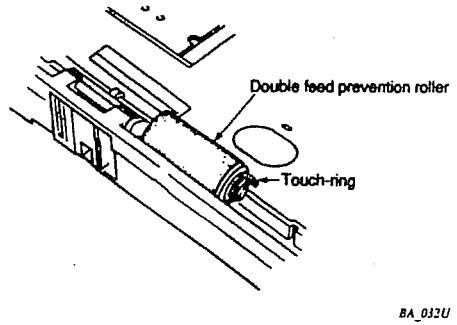


Figure 2-11-2

   e) Reassemble in the reverse order.

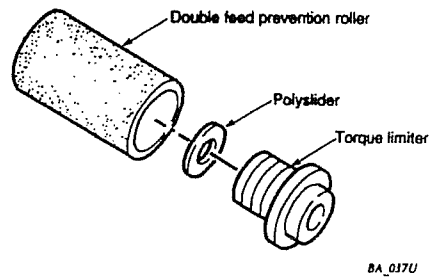


Figure 2-11-3

2.3 Developer unit

1. Developer unit operation

1) The developer (approx. 650 g) is kept inside the developer mixing section; 4% is powdered non-magnetic toner and the remainder consists of magnetic carrier particles.
2) The rotation force of the main motor is transmitted from reduction gear (A) to the developer drive gear, which rotates the magnet roller gear. The magnet roller gear, which is interlocked with the mixing gear and transport coil gear, performs the mixing operation of the developer and causes the toner and carrier particles within the developer unit to respectively assume a positive (+) and negative (-) friction charge.

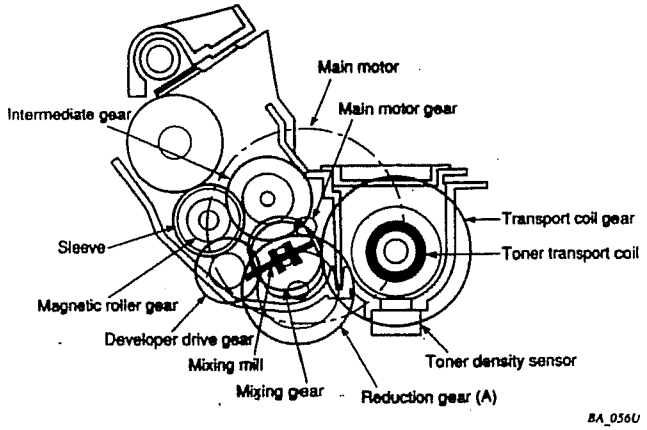
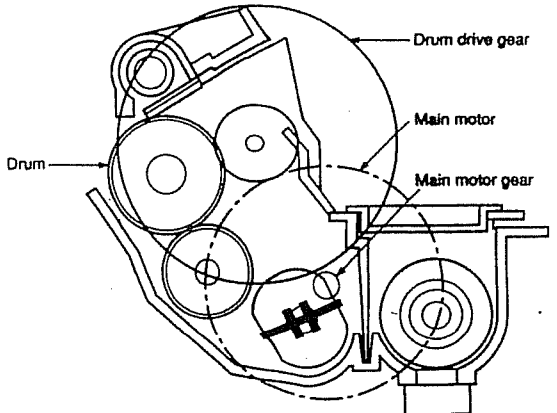


Figure 2-12-1

3) Rotation of the drum is driven by the rotation force of the main motor via drum drive gear.



4) The sleeve, which is a rotating aluminum cylinder, rotates counterclockwise at 211.6 rpm. The magnet inside the sleeve causes the mixed developer to adhere to the sleeve's outer surface where it forms a magnetic brush. The sleeve moves in the counterclockwise direction. A doctor blade, mounted 0.65 mm from the sleeve, determines the height of the magnetic brush as the developer passes through the gap.
5) The drum on which the electrostatic latent image has been formed (negative charge pattern) is rotating in the clockwise direction, and contacts the magnetic brush of the sleeve.
The gap between the drum and sleeve is 0.85 mm.
The sleeve assumes the opposite polarity (positive), so the toner adheres to the electrostatic latent image. Meanwhile, a bias voltage of – 250VDC is being applied to the sleeve in order to regulate the amount of toner adhering control to the drum as well as the dispersal of toner.
The 0.85 mm gap between the drum and sleeve is regulated by a spacer ring with a diameter that is 1.70 mm larger than the sleeve diameter and contacts the edges of the drum.

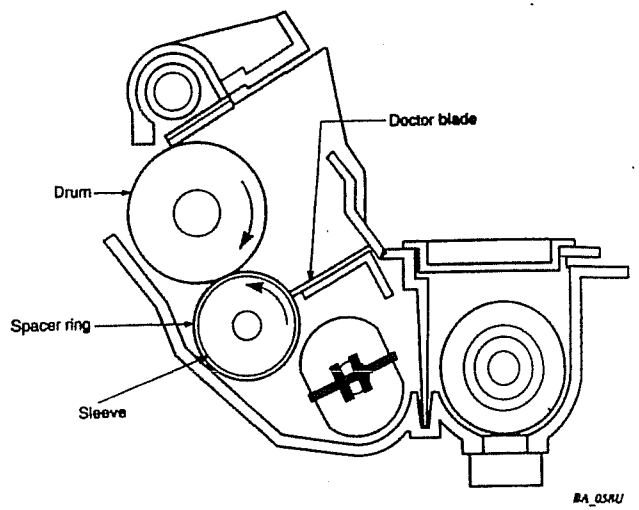


Figure 2-13-1

2. Toner density/level control

1) The toner density sensor mounted in the developer mixing section controls the toner density. The toner density sensor uses a inductance type sensor. When it detects the toner amount in the developer mixing section as being below the required level, a fixed amount of toner is supplied to the developer mixing section.
2) The developer is a mixture of a magnetic carrier and non magnetic toner. If the toner amount in the developer mixing section is above the required amount, the percentage of magnetic carrier is less, and the magnetic resistance decreases. Inversely, if the toner amount in the developer mixing section is below the predetermined amount, the percentage of magnetic carrier is greater, and the magnetic resistance increases. The toner supply is regulated by the detection of the changes in magnetic resistance.

   Note: When using magnetic materials, the magnetic resistance decreases as the cross-sectional area increases, or as the magnetic path shortens. The inductance type sensor has the same core as drive coil L1, detection coil L3, and standard coil L2. Therefore, when L1 is driven by a high frequency, the output voltages of L2 and L3 at the standard toner density level become equal. This allows detection coil L3's output to change, to correspond with the changes in toner density

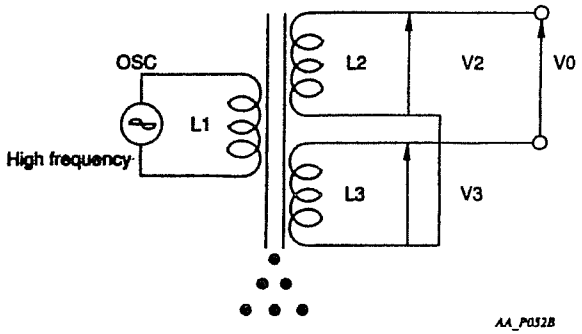


Figure 2-14-1

3) When the toner is consumed and the toner density decreases, the sensor output (VO) increases. When the sensor output exceeds the standard voltage (Vs), the toner supply/shutter motor rotates the toner bottle to supply toner to the developer mixing section.
   This maintains a uniform toner density.
4) Toner level indication is carried out with the toner density sensor detecting changes in toner density when the toner is supplied to the developer mixing section.When this density change is greater than the standard level, the presence of toner is determined. If it is less that the standard, the absence of toner is detected and the ADD TONER indicator lights.

3. Drum cleaning operation

1) After developing and transfer are completed, some toner is left on the drum surface. This remaining toner is scraped off by a cleaning blade. The cleaning blade remains in constant contact with the drum surface at a fixed pressure (due to the elasticity of the cleaning blade) and functions to clean the drum surface.
2) The remaining toner scraped off by the cleaning blade is fed into the cleaning frame and carried to the front of the developer unit by the rotation of the toner transport spiral, then stored in the waste toner bottle for disposal.

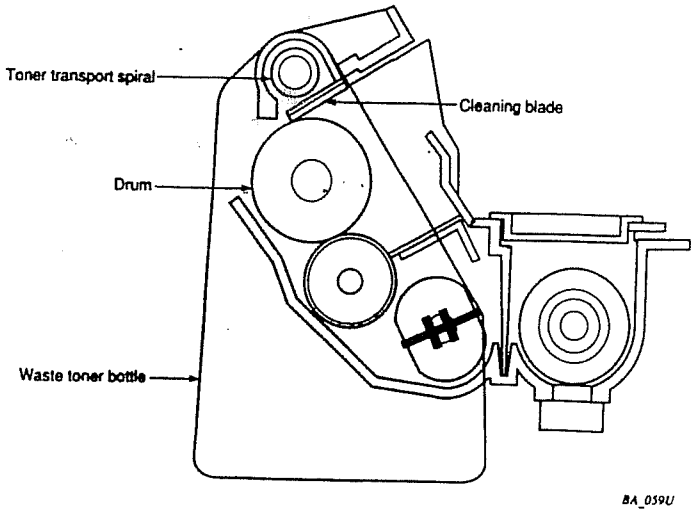


Figure 2-15-1

4. **Developer unit removal**
   1) Replacement of drum, cleaning blade and developer
      Caution: • After the developer is replaced, the automatic gain adjustment for the Toner Density Sensor (F8-09) (Refer to 5. Developer unit adjustment on page 2-20) and the Exposure Standard adjustment (F6-11) must be performed (Refer to 7. Optical unit adjustment on page 2-40).
      • After drum is replaced, the Exposure Standard adjustment (F6-11) must be performed (Refer to 7. Optical unit adjustment on page 2-40).
      a) Open the toner hopper cover.
      b) Open the left cover.
      c) Remove the waste toner bottle.
      d) Disconnect the developer unit connector.
      e) Remove the developer unit (2 screws).
      Caution: • When handling the developer unit (removing/installing), pay close attention to the "CAUTUION" label on the drum protection cover.

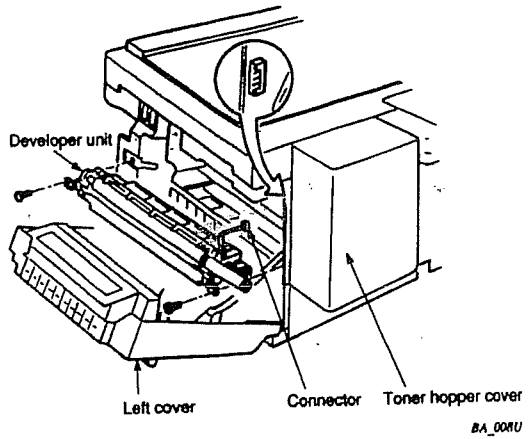


Figure 2-16-1

f) Remove the drum stoppers (front/rear) (2 screws each).
g) Remove the drum section (2 screws)

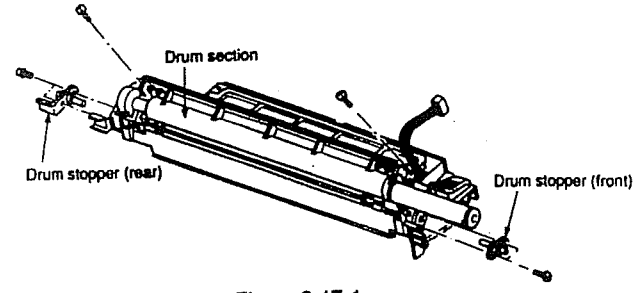


Figure 2-17-1

h) Remove the drum.
   Note: The drum should always be handled with care, whenever a drum is installed or removed in a drum section.
   Do not: • Touch the drum or mar the drum surface.
   • Expose the drum to steam, saliva, or any other liquid.
   • Expose the drum to high heat conditions
   • Expose to direct sunlight. Always cover the drum when removed from the copier with a clean sheet of paper.
   • Expose to areas with high chemical fume concentration.
i) Remove the drum cleaning blade (2 screws).

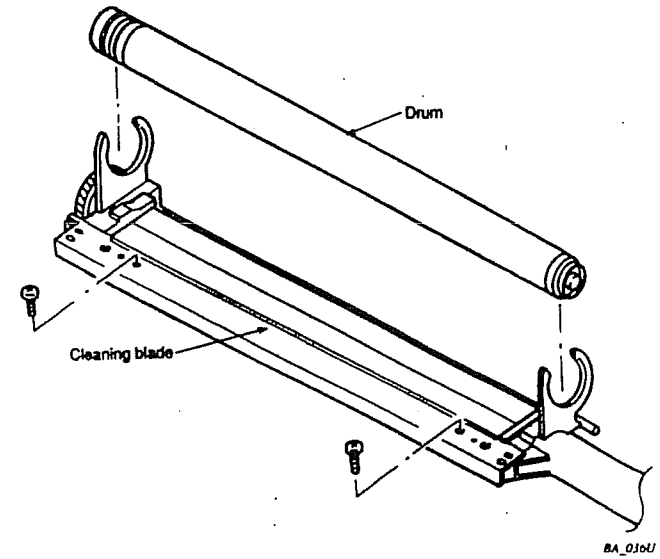


Figure 2-17-2

j) Remove the developer unit lid.

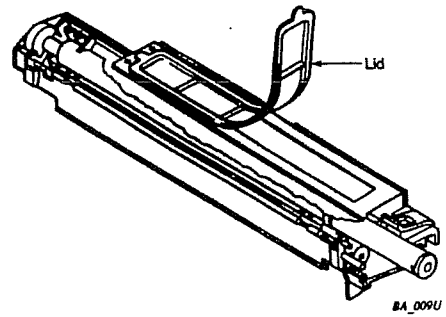


Figure 2-18-1

k) Tilt the developer unit over a newspaper or a suitable container. The majority of the developer should fall out. Some developer will remain on and under the magnetic roller.
l) Take a new bottle of developer and shake it approximately 10 to 15 times.
m) Pour the entire bottle of developer into the unit evenly.
n) Reassemble in the reverse order.

2) Removal of charge corona
   a) Remove the developer unit (Refer to Developer unit removal on page 2-16).
   b) Remove the charge corona cover (1 screw) and remove the charge corona.

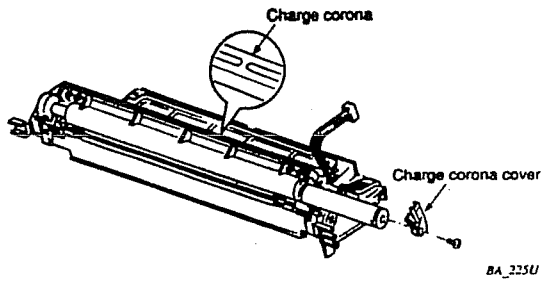


Figure 2-18-2

3) Drum cleaning
   Drum cleaning should be done only when absolutely necessary. Do not use alcohol and organic matter
   Note:
   - Partial cleaning of the drum should be avoided.
   - Even if the blot on the drum surface is partial, the whole surface must be cleaned.
   - Cleaning the drum could reduce the normal life of the drum. Only clean when absolutely necessary.

   a) Remove the drum as described in step 1, a to h.
   b) With a soft pad wipe off lightly any foreign substance on the drum surface such as toner and dust.
   c) Clean the drum flanges with a soft pad.
   d) Reassemble in the reverse order.

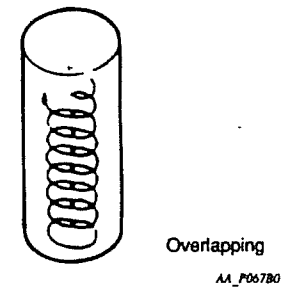


Figure 2-19-1

5. **Developer unit adjustment**
   1) Automatic gain adjustment of toner density sensor
      - After the developer and toner density sensor is replaced, this adjustment must be performed.
      - When the power switch turns ON and the ADD TONER indicator flashes, toner is supplied automatically during initialization operation, then toner density change is greater than the standard level.

      a) Remove the developer unit.
      b) Press the PAPER TRAY, ZOOM DOWN and 1 DIGIT keys to enter the F mode.
      c) Re-install the developer unit.
      d) Set the F8-09.
      e) Press PRINT key for automatic TDC sensor gain adjustment. (Wait approximately 2 minutes until the adjustment cycle stops.)
      f) Write the contents of F6-21 and 26 to the memory sheet.
      g) Press the PAPER TRAY, ZOOM DOWN and CLEAR/STOP keys to escape from the F mode.

2.4 Hopper unit

1. **Toner supply operation**
   The hopper unit stores the toner that is supplied to the developer mixing section. A microprocessor controls the amount of toner that the hopper releases into the mixing section.
   1) When the toner density sensor detects that the toner level is too low, the microprocessor outputs a signal to rotate the toner supply/blacking prevention film motor, causing the motor to rotate.
   2) The rotational force of the toner supply/shutter motor is transmitted via drive gears to rotate the toner transport spiral, so toner can be supplied to the developer mixing section. The agitation and mixing shaft rotates together with the toner transport spiral and supplies toner to the toner transport spiral.

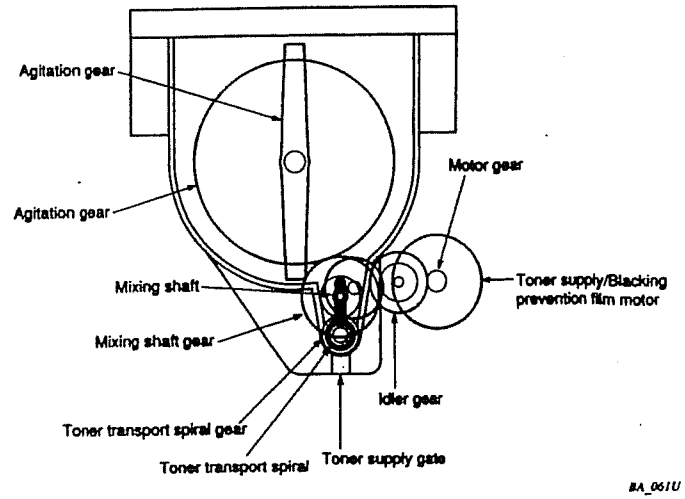


Figure 2-21-1

2. Toner transport pipe shutter operation

This mechanism functions to close and open the opening in the toner transport pipe of toner hopper unit as the developer unit is removed from, and installed into, the copier.

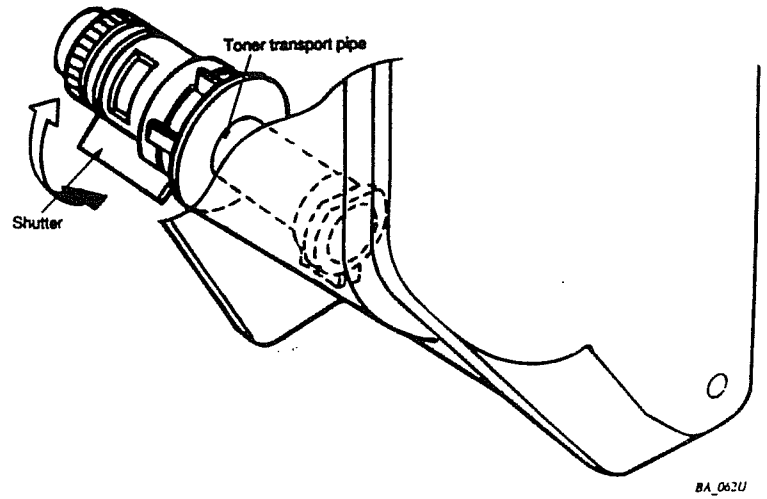


Figure 2-22-1

2.5 Fuser unit

1. Fuser operation

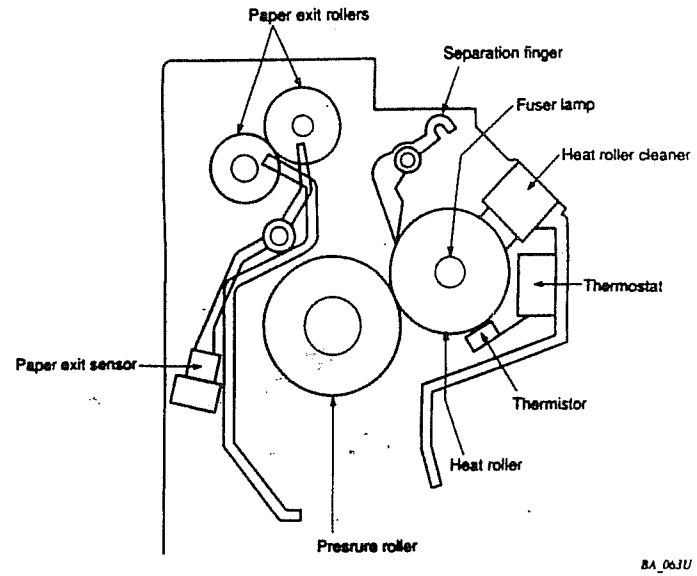


Figure 2-23-1

1) When the power switch is turned ON, the fuser lamp lights and the heat roller starts to warm up.
2) In the center of the teflon coated heat roller is a fuser lamp (halogen lamp) that serves as the heat source. The surface temperature of the heat roller is held at approximately 180°C. The temperature is monitored by a thermistor that contacts the heat roller surface. The CPU control circuit switches the fuser lamp ON/OFF in order to maintain a constant temperature for the heat roller.
3) A thermostat is mounted next to the heat roller as a safety precaution against abnormal temperature increases of the heat roller. The thermostat turns off the fuser lamp if the heat roller temperature reaches an abnormal temperature.
4) The pressure roller is silicon rubber and applies a uniform pressure of approximately 0.5 kg/cm against the heat roller. This pressure can be adjusted by the pressure spring.
5) When the temperature in the heat roller reaches approximately 160°C, the main motor turns ON and rotates the heat roller, pressure roller and the paper exit rollers. At this time, developer unit initialization starts.
6) Separation fingers are pressed against the heat roller to prevent the copy paper from sticking to the roller.

7) To prevent the heat roller from becoming dirty during copy operations, it is constantly cleaned by a heat roller cleaner.
8) During the final copy operation, the paper exit sensor is turned ON when detecting the paper exiting, and within a predetermined time, the main motor turns OFF. The heat roller, pressure roller and paper exit rollers stop.

Note:
- If the heat roller does not reach the proper operating temperature within a predetermined time after the fuser lamp is lit, "E4" and "01" will appear in the display.
- During the copy operation, the fuser lamp is turned ON. If the heat roller temperature is approximately 150°C or less, WAIT is displayed on the control panel and the copy operation will stop after ejecting the paper. (Copy operation is available by pressing the PRINT key again after the WAIT indication goes off.)
- When "E4" and "01" are displayed, "E4" and "01" can be cleared by opening/closing the left cover switch OFF/ON after the repair is completed.
- When the thermistor is short-circuited or open, "E4" and "01" are displayed.

2. Fuser unit removal

1) Removal of pressure roller, fuser lamp and heat roller
   a) Open the left cover.
   b) Remove the heat roller cleaner.
   c) Remove the fuser cover (2 screws).

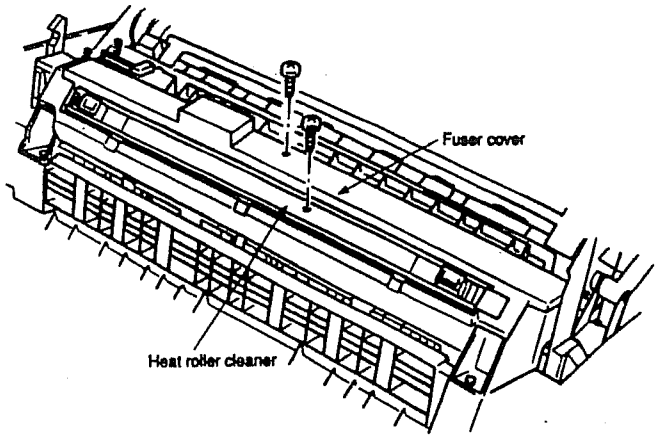


Figure 2-25-1

   d) Remove the fuser lead wire (2 screws).
   e) Disconnect the thermistor connector.
   f) Remove the heat roller section (6 screws).

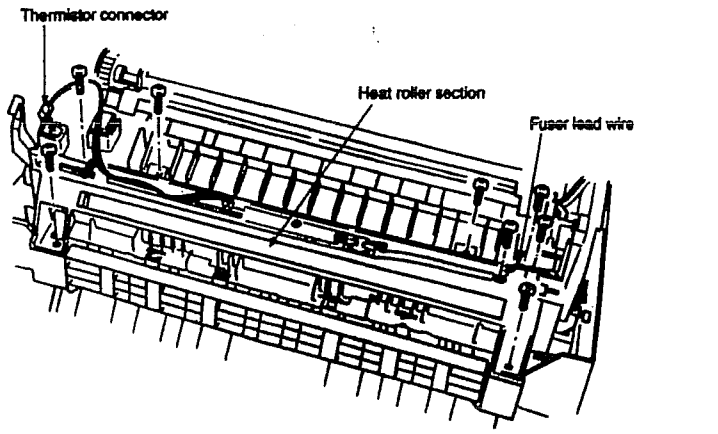


Figure 2-25-2

g) Remove the pressure roller.

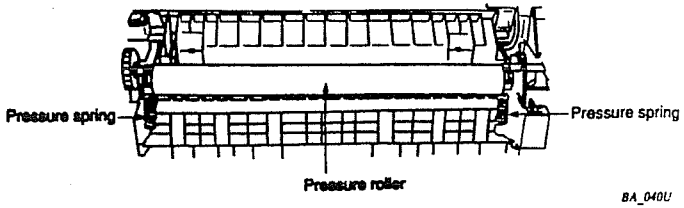


Figure 2-26-1

h) Remove the bearings from pressure roller.

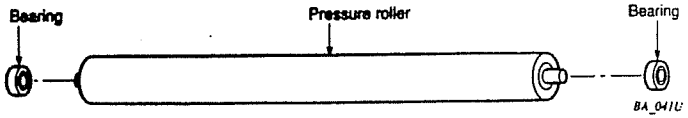


Figure 2-26-2

i) Remove the lamp holder (rear) (1 screw).
j) Remove the fuser lamp.

Note
- Do not touch the glass portion of the lamp.
- When the lamp is installed, the rated voltage mark must be towards the rear.
- When installing the lamp, make sure it contacts the rear fuser lamp terminal.

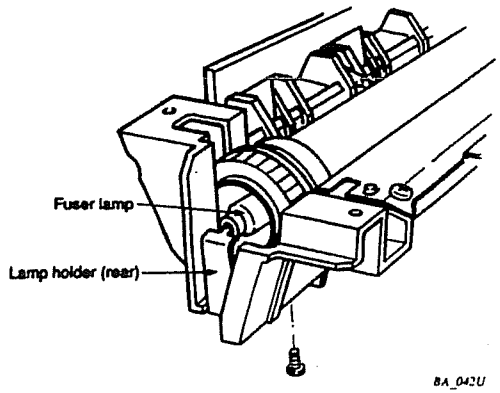


Figure 2-26-3

k) Remove the separation fingers (4 pieces).

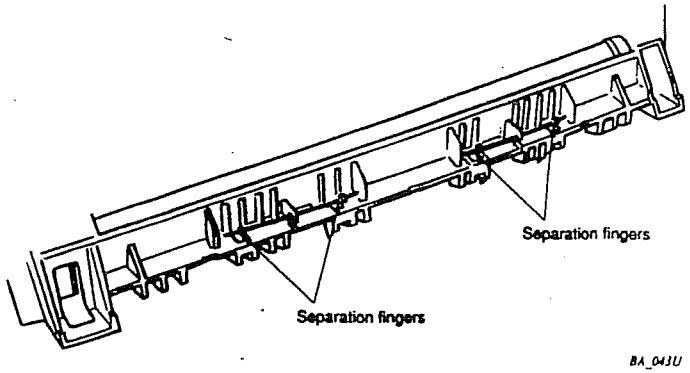


Figure 2-27-1

l) Remove the heat roller section mounting bracket with ground plate. (2 screws).
m) Remove the heat roller assembly.

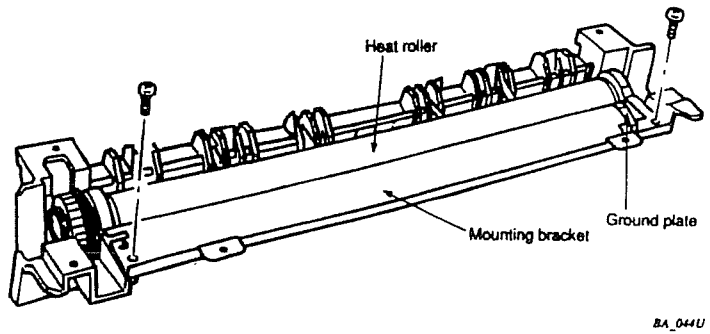


Figure 2-27-2

n) Remove the fuser drive gear and bushings.
o) Reassemble in the reverse order.

Note: When installing the pressure roller, make sure pressure roller spring is installed to the roller mounting bracket.

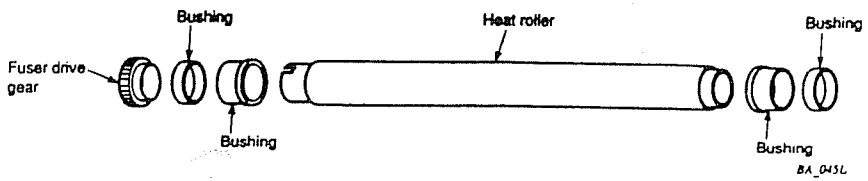


Figure 2-27-3

2.6 Optical unit

1. Optical system operation

As Figure 2-28-1 shows, there is a full-speed unit home position sensor on the left side of the copier. The sensor plate on the full-speed unit controls the optical system by switching the full-speed unit home position sensor ON/OFF.

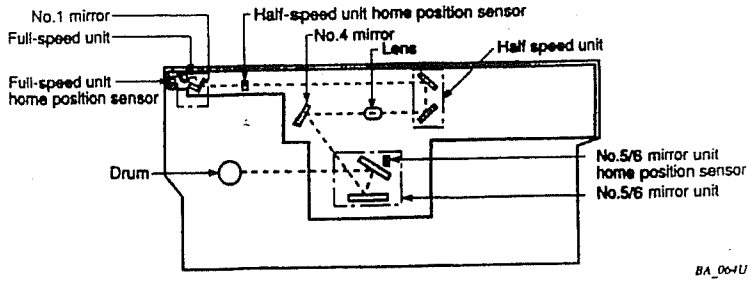


Figure 2-28-1

When the power is turned ON, the lamp unit scanner motor starts to turn and move the full-speed unit, half-speed unit and No.5/6 mirror, whether or not the full-speed unit home position sensor detects the sensor plate.

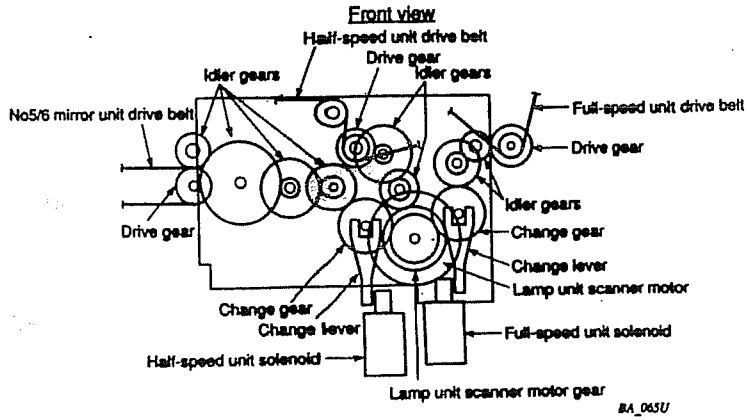


Figure 2-28-2

Unit operation (Solenoid Signal)

	Scan	Half-speed unit copy ratio	No.5/6 mirror unit copy ratio
Half-speed unit solenoid	OFF	ON	ON
Full-speed unit	OFF	OFF	ON

2. Auto original density control operation (Pre-scan)

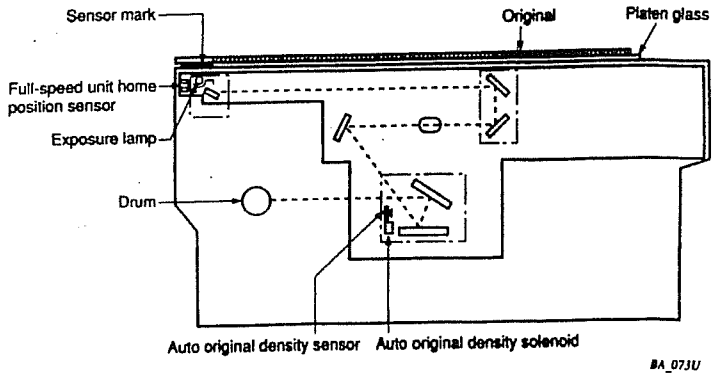


Figure 2-29-1

1) When the PRINT key is pressed, the fuser cooling fan turns at full speed, the main motor turns.
2) After a predetermined time, the exposure lamp lights, and the auto original density solenoid comes on to move the auto original density sensor to the center of the optical axis. At the same time,the lamp unit scanner motor turns forward and the full-speed unit and half-speed unit start. They move approximately 5.9" (15cm) in the direction of the end position, then return.
3) During this return, the original density value read in the auto original density sensor is output to the CPU PCB. The CPU calculates the difference between this density and the density of the standard density mark and sets the exposure lamp voltage to match the density of the original.
4) When the optics home position sensor detects the full-speed unit, the lamp unit scanner motor stops, the auto original density sensor also moves to its home position, and the copy operation starts with the density level determined by the auto original density sensor operation.
5) When the full-speed unit movement turns off the optics home position sensor, the registration timing starts. When the predetermined time has passed, the timing roller clutch comes on to feed the copy paper.
6) After the operating time specified for the size of paper being used lapses, the lamp unit scanner motor rotates in reverse, the exposure lamp goes off, and the full-speed unit moves in the direction of the optics home position sensor.
7) The lamp unit scanner motor is a stepping motor. It is controlled by the pulses output from the CPU PCB.

3. **Constant light volume measurement operation**
   1) When the fuser lamp is on more than 20 seconds, the exposure lamp lights the standard density mark and at the same time the auto original density solenoid turns on to move the auto original density sensor to the center of the optical axis. This operation raises the exposure lamp voltage until the auto density sensor output reaches the level set when the constant light volume was adjusted.
   2) When the auto original density sensor output reaches this level, the exposure lamp goes out. The auto original density sensor output just before the lamp goes out is stored into the non-volatile memory, and the exposure lamp voltage becomes the standard for copying. (F6-15 and F6-16)
   3) The constant light volume measurement operation can be turned off using F5-24.

4. **Reduction and Enlargement mechanism**

The optical unit is composed of a through-lens, mirrors and exposure lamp. It uses a mirror movement system and a slit-exposure system. Reduction and enlargement are performed by the following four methods:

1) Magnification change ratio (Half-speed unit and No.5/6 mirror unit movement system)
2) Variation of optical system scan speed.
3) Exposure lamp voltage change.
4) Blacking prevention film change

1) **Magnification change ratio (Half-speed unit and No.5/6 mirror unit movement system)**

When in the Reduction/Enlargement mode, with the 1:1 position as a standard, the distance from the original to the lens is changed by moving the half-speed unit. The distance from the lens to the drum is also changed by moving the No.5/6 mirror.

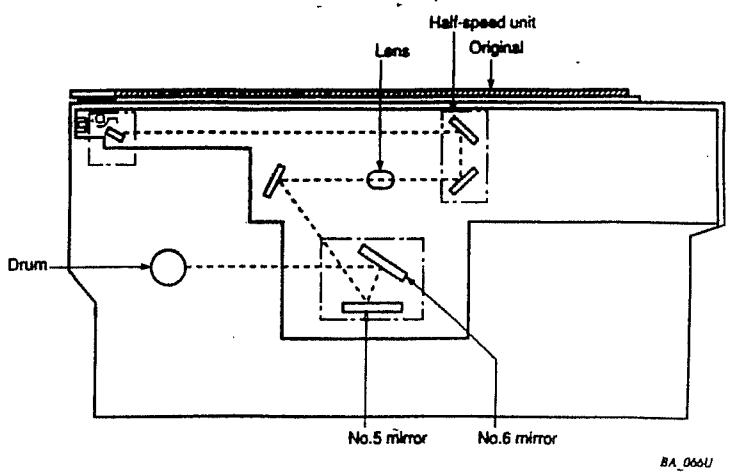


Figure 2-31-1

(Half-speed unit movement operation)

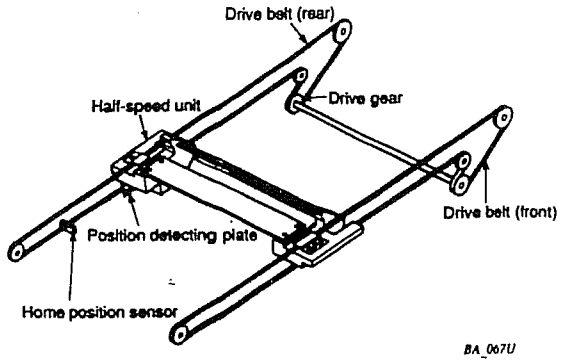


Figure 2-32-1

1) When the microprocessor outputs a rotation pulse that conforms to the copy ratio (0.2 mm of movement per pulse), the lamp unit scanner motor begins rotating. This rotation force is transmitted to the idler gear and half-speed unit drive gear to move the half-speed unit to the desired position by the half-speed unit drive belt.
2) The stopping position of the half-speed unit that conforms to the copy ratio is detected by the half-speed unit position detecting plate and half-speed unit home position sensor, which are mounted on the half-speed unit.

(No.5/6 mirror unit movement operation)

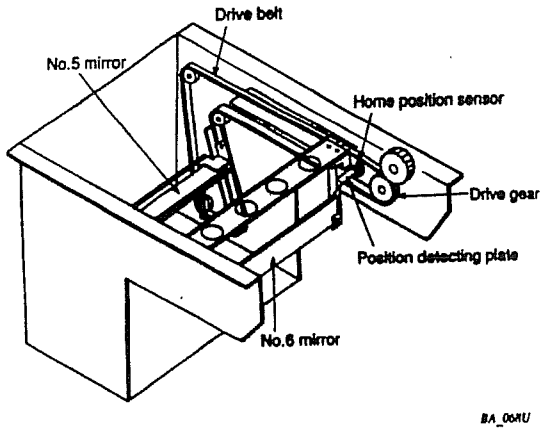


Figure 2-33-1

1) When the microprocessor outputs a rotation pulse that conforms to the copy ratio (0.13 mm of movement per pulse), the lamp unit scanner motor begins rotating. This rotation force is transmitted to the idler gear and mirror drive gear to move the No.5/6 mirror to the desired position by the No.5/6 mirror unit drive belt.
2) The stopping position of the No.5/6 mirror that conforms to the copy ratio is detected by the No.5/6 mirror position detecting plate and No.5/6 mirror unit home position sensor, which are mounted on the No.6 mirror holder (rear).

2) **Variation of optical system scan speed**

The optical system scan speed is changed (between full-speed unit and half-speed unit) according to the copy ratio. This speed change is performed by dividing the frequency of the crystal oscillator on the CPU PCB.

a) The width direction of the original image that is sent by the mirror and lens is irradiated on drum surface without relationship to the slit as in the figure.

b) When making a reduction, the drum image a+b+c is the irradiated figure of the reduced original image A+B+C. While the drum image distance is being changed, the speed is increased so that the original image A+B+C exposure can be sent.

c) The scan speed will only alter the size of the image from lead to trail edge. The scan speed is increased for reduction and decreased for enlargement.

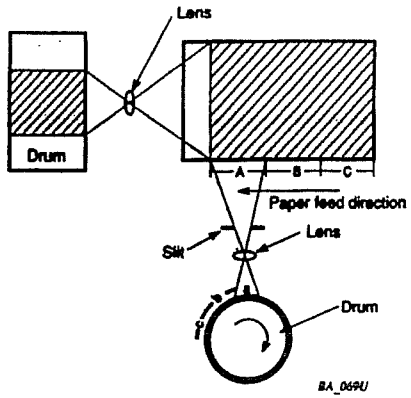


Figure 2-34-1

3) **Exposure lamp voltage change**

- The amount of light on the drum decreases for enlargement copying, so the exposure is increased to compensate.
- The amount of light on the drum increases for reduction copying, so the exposure is decreased to compensate.

4) **Blacking prevention film change**

- In reduction, the sections of the drum, not exposed by the lamp retain a charge, forming toner build up on both edges of the drum. The result is wasted toner and dirty copies.
- The charge left on the drum after transfer is removed by fully exposing the drum surface to the discharge lamp and blacking prevention film, which is also used for reduction blacking prevention.
- The blacking prevention film position changes according to the reduction ratio selected.
- The blacking prevention film movement operation is accomplished by the of toner supply/blacking prevention film motor.

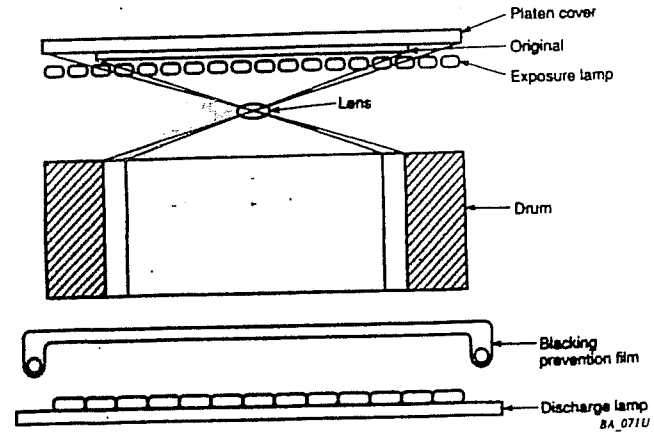


Figure 2-35-1

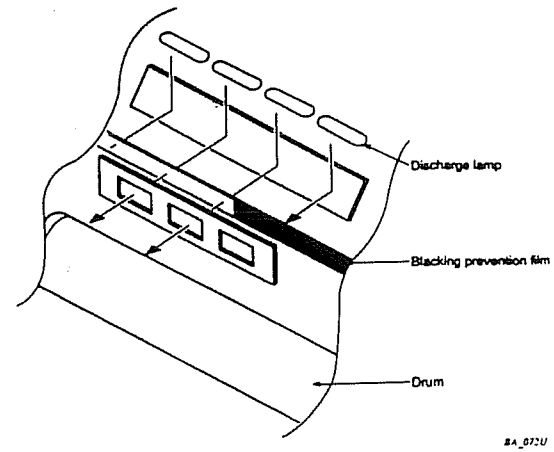


Figure 2-35-2

5. **Other operations**
   - A thermostat is incorporated in the optical system to prevent over temperature caused by the exposure lamp.
   - In PHOTO Mode, the amount of exposure is automatically decreased. In PHOTO Mode and DOCUMENT Mode the amount of exposure can be changed with the copy density select keys.

6. **Optical unit removal**
   1) Removal of exposure lamp
      Caution: After the exposure lamp is replaced, the Exposure Standard adjustment must be performed. (Refer to 7. Optical unit adjustment on page 2-40).
      a) Turn the power off and unplug the copier
      b) Remove the glass holder (left) (3 screws) and remove the platen glass.
      c) Align the full-speed unit with the opening in upper frame for easy access to the exposure lamp terminal screw.
         Note: Full-speed unit can only be moved by rotating drive shaft (located on right side). A glip is provided on the shaft.
      d) Remove the reflector plate (upper) (2 screws).
      e) Remove front exposure lamp terminal (front) (1 screw).
      f) Remove the exposure lamp.
      g) Reassemble in the reverse order.

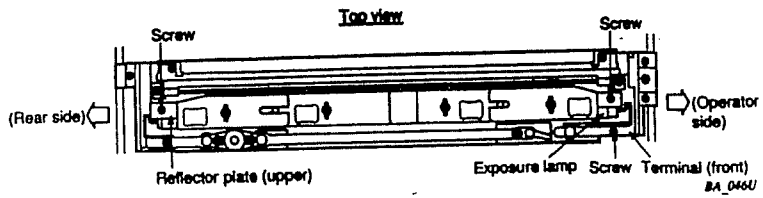


Figure 2-37-1

7. Optical unit adjustment

1) Copy density difference adjustmentThis adjustment should only be performed when absolutely necessary. Perform this adjustment when there is a copy density difference. Before adjustment, confirm that there is no dirt or condensation on the lens or mirrors.
   a) Select the F8-C00 mode.
   b) Press the PRINT key, the full-speed unit will move to the right.
   c) Turn the power off and unplug the copier.
   d) Remove the glass holder (left) (3 screws) and remove the platen glass.
   e) Loosen the aperture plate mounting screws (4 screws).
   f) Adjust the aperture plate.
      Note: If the copy density is light, make the aperture opening narrower. If the copy density is dark, widen the aperture.

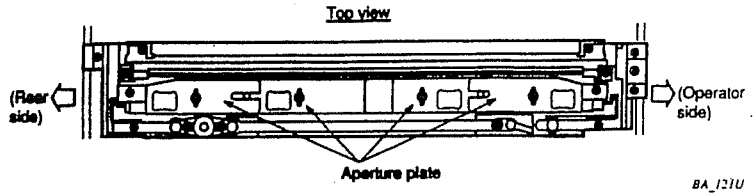


Figure 2-38-1

2) Optical skew adjustment
This adjustment should only be peformed when absolutely necessary. Perform this adjustment when there is copy skew. This adjustment should be previously checked at installation.
   a) Remove the platen glass.
   b) Loosen the belt clamp (front) mounting screws (2 screws).
   c) Turn adjustment screw as shown in figure below.
      Note If it is required to adjust the skew again, move the belt clamp (front) in small movements very carefully and check for skew.

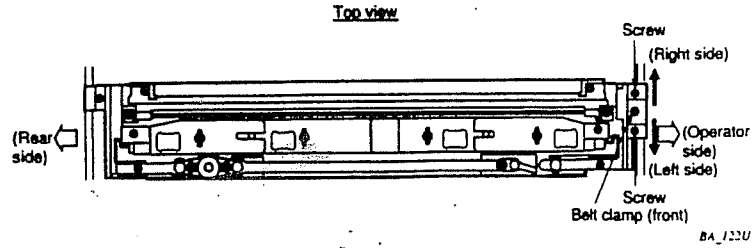


Figure 2-39-1

- From the operator side of copier, move the belt clamp (front) to the right side.

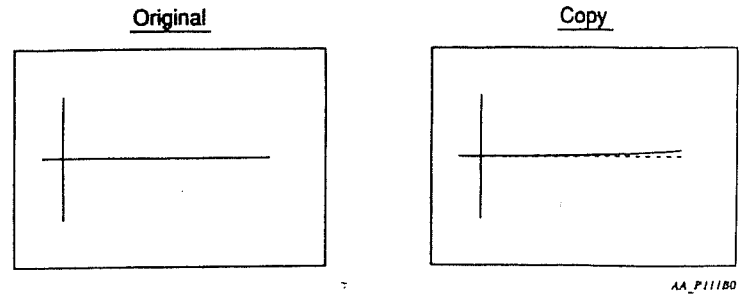


Figure 2-39-2

- From the operator side of copier, move the belt clamp (front) to the left side.

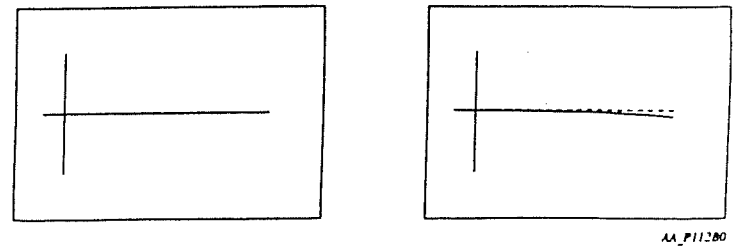


Figure 2-39-3

3) Exposure standard adjustment
- After the durm, exposure lamp and auto original density sensor is replaced, this adjustment must be performed.

a) Enter the F6 mode.
b) Comfirm F6-C61 is 0, and change if necessary. (If drum is replaced)
c) Enter the F2 mode and set the exposure to the center position in the DOCUMENT mode.
d) Make a copy of Test Chart #53 (Ledger size) or #54 (A3 size) with Gray Scale (P/N: FQ-SJ101).
- Gray Scale 1 should not be visible.
- Gray Scale 2 should be clearly visible.

e) F6-11 adjustment.
Note: If the density light, (-) direction = density darker.
If the density dark, (+) direction = density lighter.

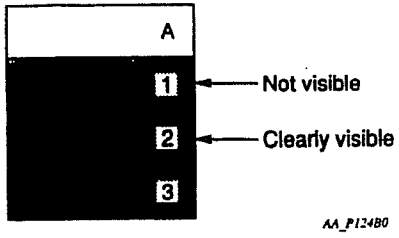


Figure 2-40-1

f) Repeat steps c to e until the proper density is attained.

4) Full-speed unit and half-speed unit position adjustment
When the full-speed unit and half-speed unit are moved by hand, position slippage may occur, then this adjustment must be performed.

(Full-speed unit)
a) Release the full-speed unit shaft stoppers (front/rear), then lift up the shaft.
b) Manually move the full-speed unit to the paper exit side fully.
c) Lock the full-speed unit shaft stoppers while firmly holding the full-speed unit against the exit side frame.

(Half-speed unit)
a) Loosen the belt clamps (front/rear) mounting screws (1 screw each).
b) Manually move the half-speed unit so that the half-speed unit contacts the rail stoppers (front/rear).
c) Tighten the belt clamp (front/rear) mounting screws.

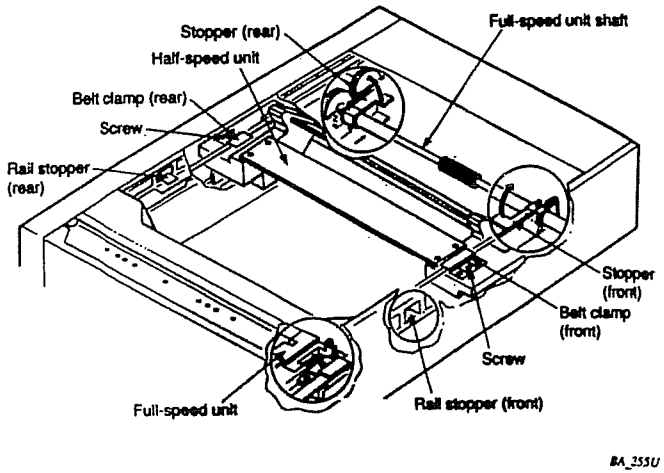


Figure 2-41-1

2.7 Miscellaneous removal

1) Removal of ozone filter
   a) Open the left cover.
   b) Push the hook in the arrow direction and remove the ozone filter assembly.

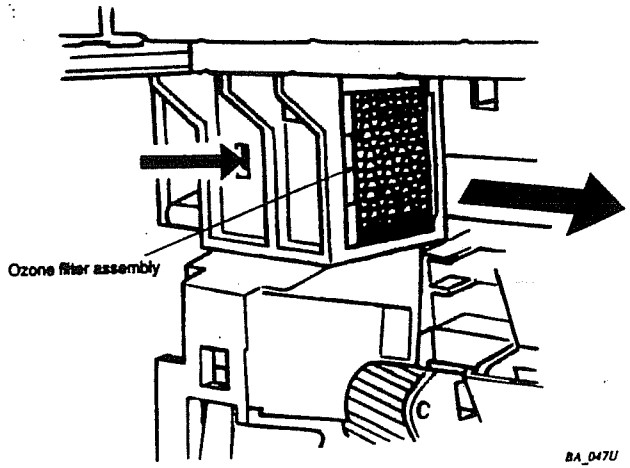


Figure 2-42-1

   c) Remove the ozone filter.
   d) Reassemble in the reverse order.

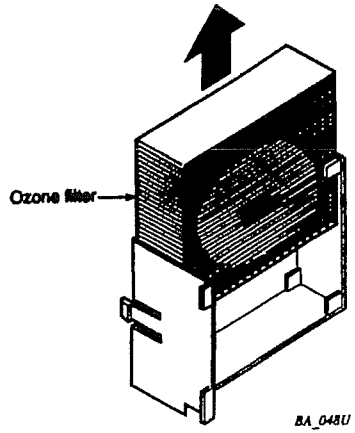


Figure 2-42-2

2) Replacement of corona wire
   When the corona wire is external dirty, loose, damaged, or broken, replacement is necessary.
   (Charge corona)
   a) Remove the grid plate.
   b) Remove the rear cover.
   c) Remove the old wire.
   d) Hook the wire ring to the rear hook spring plate.
   e) Hook the wire ring to the front hook pin.
   f) Reaasemble in the reverse order.
   (Transfer corona)

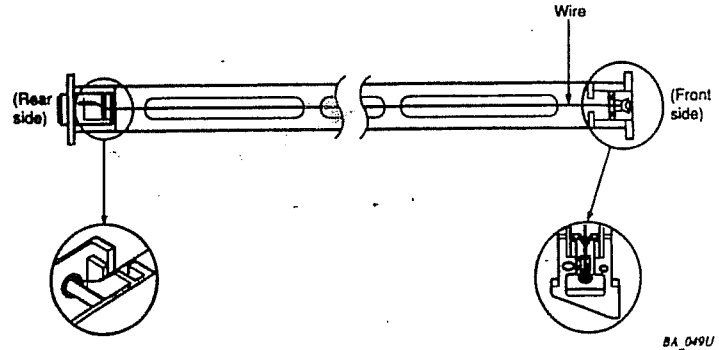


Figure 2-43-1

   a) Remove the ground plate, paper separation guide and pre-transfer roller assembly (2 screws).
   b) Remove the old wire.
   c) Hook the wire ring to the front hook pin.
   d) Hook the end of the wire ring to the tension spring.
   e) Reassemble in reverse order.

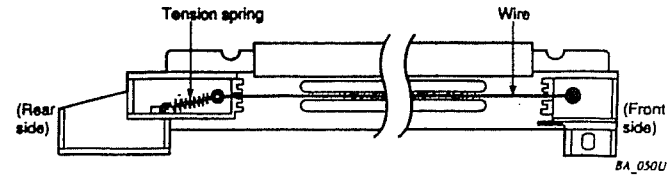


Figure 2-43-2

3) Removal of low voltage power supply PCB
When the low voltage power supply PCB is installed, the power cord connectors are to be inserted as shown in Figure 2-44-1.
a) Remove the right cover (2 screws).
b) Remove the ground plate (3 screws).
c) Disconnect all connectors.
d) Remove the low voltage power supply PCB assembly (3 screws).

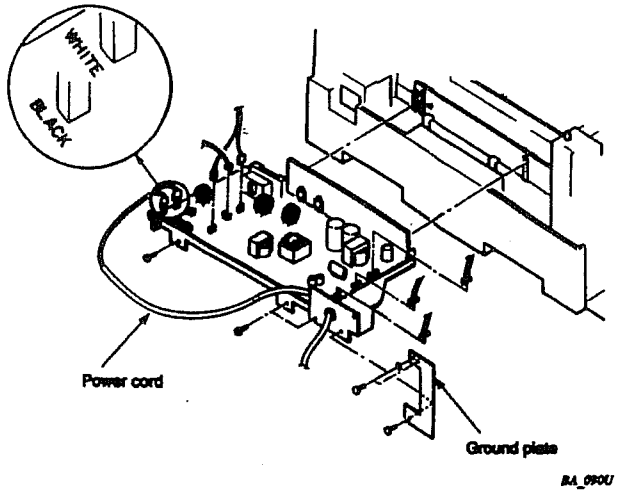
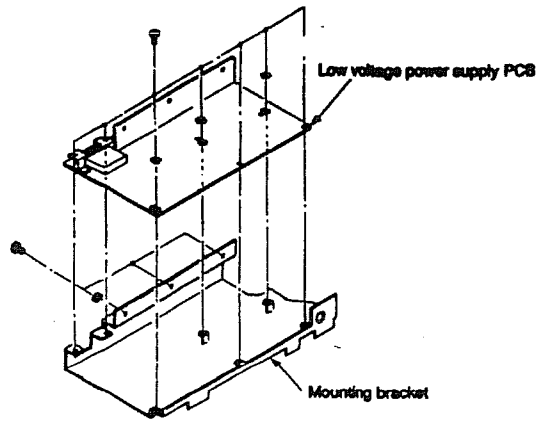


Figure 2-44-1

e) Remove the low voltage power supply PCB from mounting bracket (10 screws).
f) Reassemble in the reverse order.



Section III
Preventive Maintenance

3.1 General

1. A preventive maintenance inspection of the copier should be performed every 30,000 copies. If the preventive maintenance inspection is correctly performed, high quality copies can be maintained for a long period of time, machine down time can be reduced, and the number of service calls minimized.
2. Refer to the attached chart for the schedule of replacements at 30,000 copy PM.
3. A high voltage hazard remains even when the machine is not operating. Always disconnect the machine from its power source (wall outlet) before servicing or disassembly.

3.2 Recommended tools

1. The following items are necessary to perform an effective, time efficient PM.
   a) Vacuum cleaner
   b) Blower brush
   c) Isopropyl alcohol
   d) Cleaning cotton
   e) Lint free wiper (Kim wipes)
   f) Cotton swabs
   g) Glass cleaner

3.3 Cleaning recommendations

1. It is generally recommended that during the course of each PM (or each visited time), the developer unit be removed for easy access to the general interior of the copier. Vacuuming of the copier is the first step.
2. Refer to the appropriate PM cycle on the maintenance chart (page 4-2), where the replacement and cleaning cycles are broken down by sub-assembly.
   Note: Use of IPA is strongly suggested, but it is only to be used when dry cleaning is ineffective. Excessive use of IPA can decrease the operating life of rubber components.
3. IPA should be used to clean the feed roller, timing roller, thermistor, corona, transport roller, and fuser pressure roller (only when required).
4. Cleaning with a blower brush is recommended for the corona units, optics, and general purpose.
5. Before servicing the developer unit, it is advisable to remove the drum and place in a dark safe place, away from typical drum hazards (Ex. Physical damage, direct intense light, chemical vapors, etc.).
6. Exercise caution in handling and cleaning the drum cleaning blade. Physical damage and finger marks will affect copy quality.

7. For individual removals, replacement, and adjustments refer to respective sub-assemblies information in section III.
   Caution: It is recommended that after using any cleaning agents and/or a drum refresher pad that the service technician place those items in a sealable plastic bag and discard them. It is also recommended that the service technician wash his hands after handling such items.

3.4 Maintenance chart

Item		Service / Part number	Q'ty per unit	(× 1000) 30	60	90	120
Sheet bypass	Sheet bypass paper feed roller	FFPMA0518	1	○	×	○	× (×)
	Sheet bypass double feed prevention roller	FFPMA0520	1	×	× (×)	×	× (×)
	Sheet bypass paper transfer roller	FFPMA0521	1	×	× (×)	×	× (×)
	Torque limiter	FFPXF21D80	1	×	× (×)	×	× (×)
Paper feed unit	Paper feed roller	FFPMA0516	1	○	×	○	× (×)
	Cassette double feed prevention roller	FFPMA0517	1	×	× (×)	×	× (×)
	Timing roller	FFPMA05132	1	○	○	○	○
	Driven roller	FFPMA05222	1	○	○	○	○
	Paper cleaning sheet	FFPKP00731	1	○	○	○	○
	Torque limiter	FFPXC07D80	1	×	× (×)	×	× (×)
Developer unit	Charge corona wire	FFPEY0064	1		×		×
	Charge corona	FFPXG07D80	1	○	○	○	○
	Developer	FQ-ZF13	1	×	×	×	×
	Drum	FQ-HF13	1	×	×	×	×
	Waste toner bottle	FFPQA0143	1	Replace at 4,000 copies. (for user replacement)			
	Cleaning blade	FFPHK0905	1		×		×

○: Cleaning ×: Replacement

*( ): Replacement cycle based low usage.

*: Service personal can amend this schedule by taking into account the percentage of paper passed through each paper port. We feel that this will ensure more effective copier maintenance and cost effectiveness for your customers.

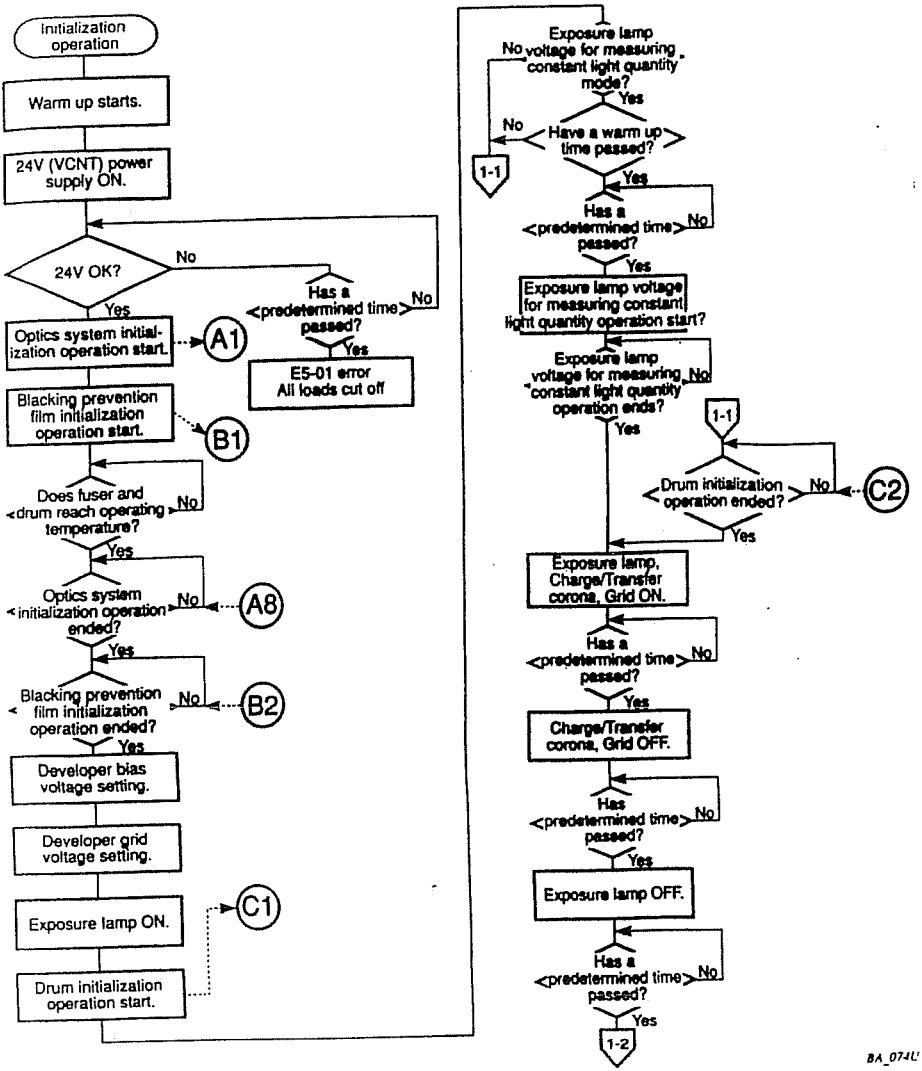
Item		Service / Part number	Q'ty per unit	(× 1000) 30	60	90	120
Fuser unit	Separation finger upper	FFPLK03131	4	○	○	○	○
	Thermistor	FFPBL0013	1	○	○	○	○
	Fuser lamp	H12V1KWN1A (for 120V ver.) H22V1KWN1A (for 220/240V ver.)	1				× 5,000 hours lamp on or machine on.
	Heat roller cleaner	FFPKM02784	1	Replace at 4,000 copies. (for user replacement)			
	Heat roller	FFPMA05241	1	○	×	○	×
	Pressure roller	FFPMA0523	1	○	×	○	×
Optics	Exposure lamp	E08V025WN2A (for 120V ver.) E16V025WN2A (for 220/240V ver.)	1				×
	No. 1 mirror	FFPGC0179	1				
	N0. 2 mirror	FFPGC0180	1				
	N0. 3 mirror	FFPGC0181	1				
	N0. 4 mirror	FFPGC0174	1	○	○	○	○
	N0. 5 mirror	FFPGC0182	1				
	N0. 6 mirror	FFPGC0183	1				
	Lens	FFPGA0042	1				
Main body	Dust protection filter	FFPHJ0034	1	○	○	○	○
	Ozone filter	FFPHJ00351	1		×		×
	Discharge lamp filter	FFPGB0021	1	○	○	○	○
	Transfer/Separation corona wire	FFPEY0064	1		×		×
	Transfer/Separation corona (with discharge saw)	FFPXF10D80	1	○	○	○	○
	Dust protection glass	FFPGC0184	1	○	○	○	○
	Platen glass	FFPGC0154	1	○	○	○	○
	Platen mat	FFPNN00361	1	○	○	○	○

○: Cleaning ×: Replacement

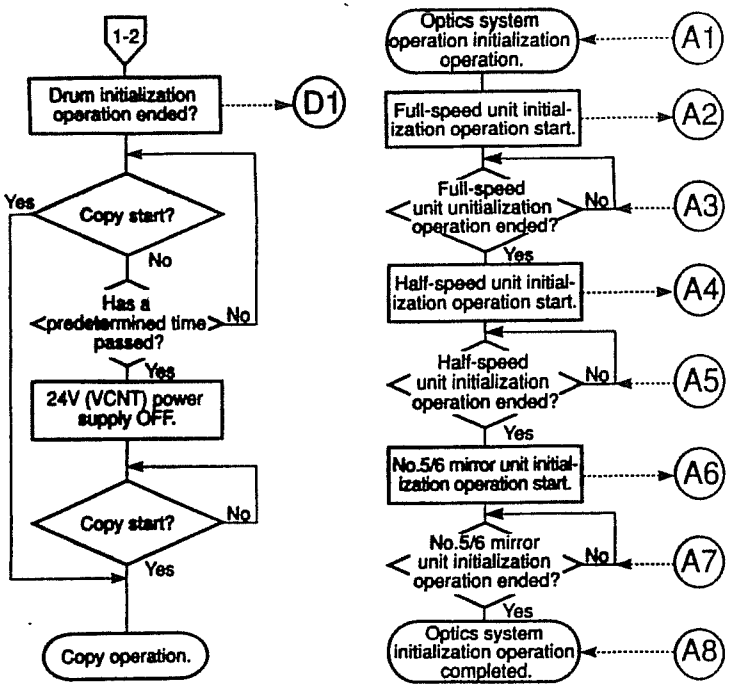
Section IV
Electrical

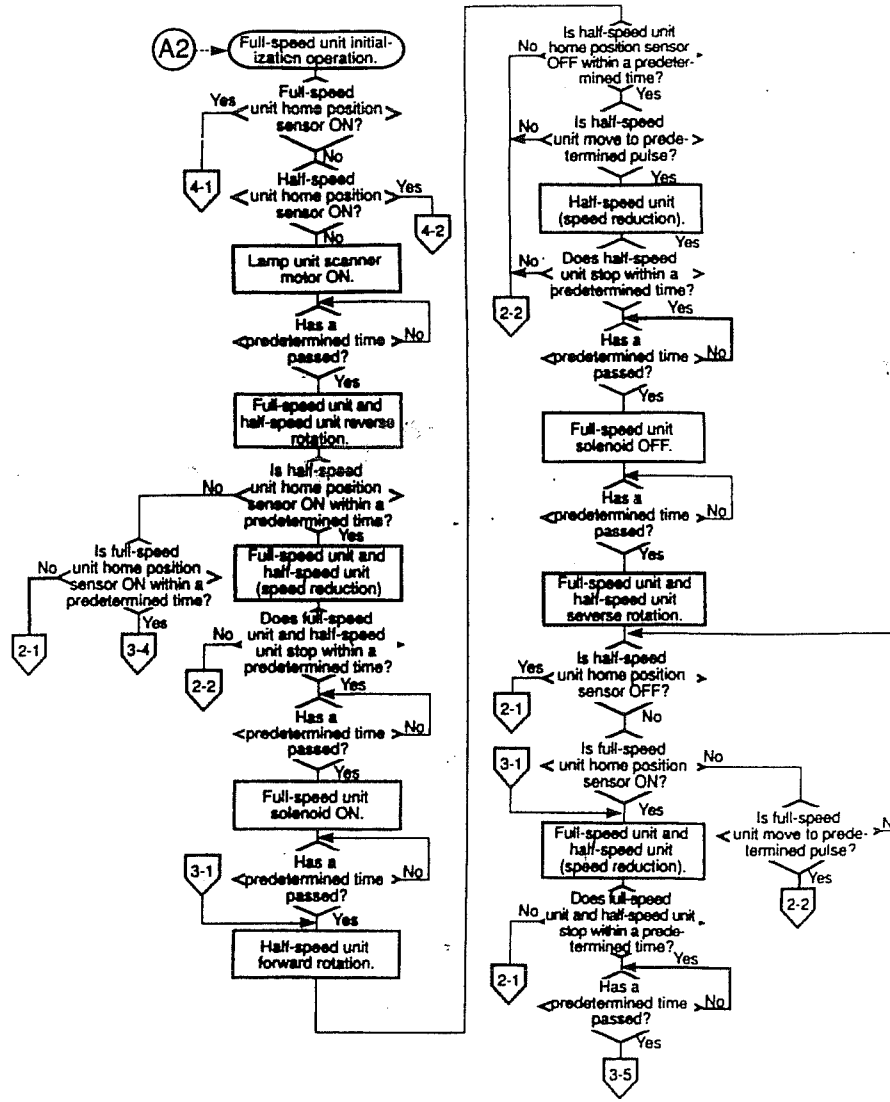
4.1 General flow chart

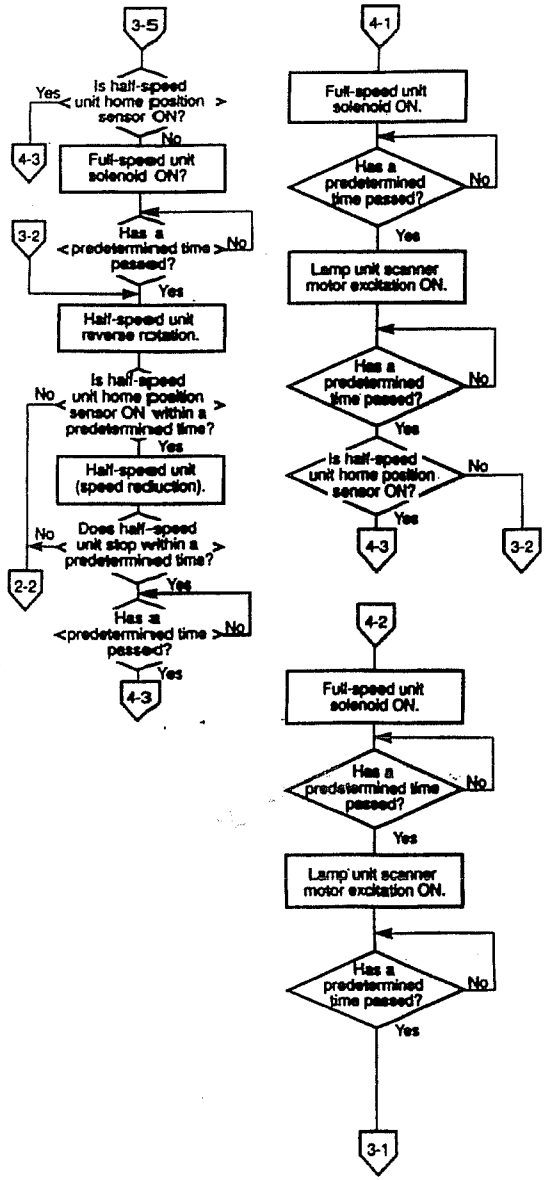
1. Power switch ON



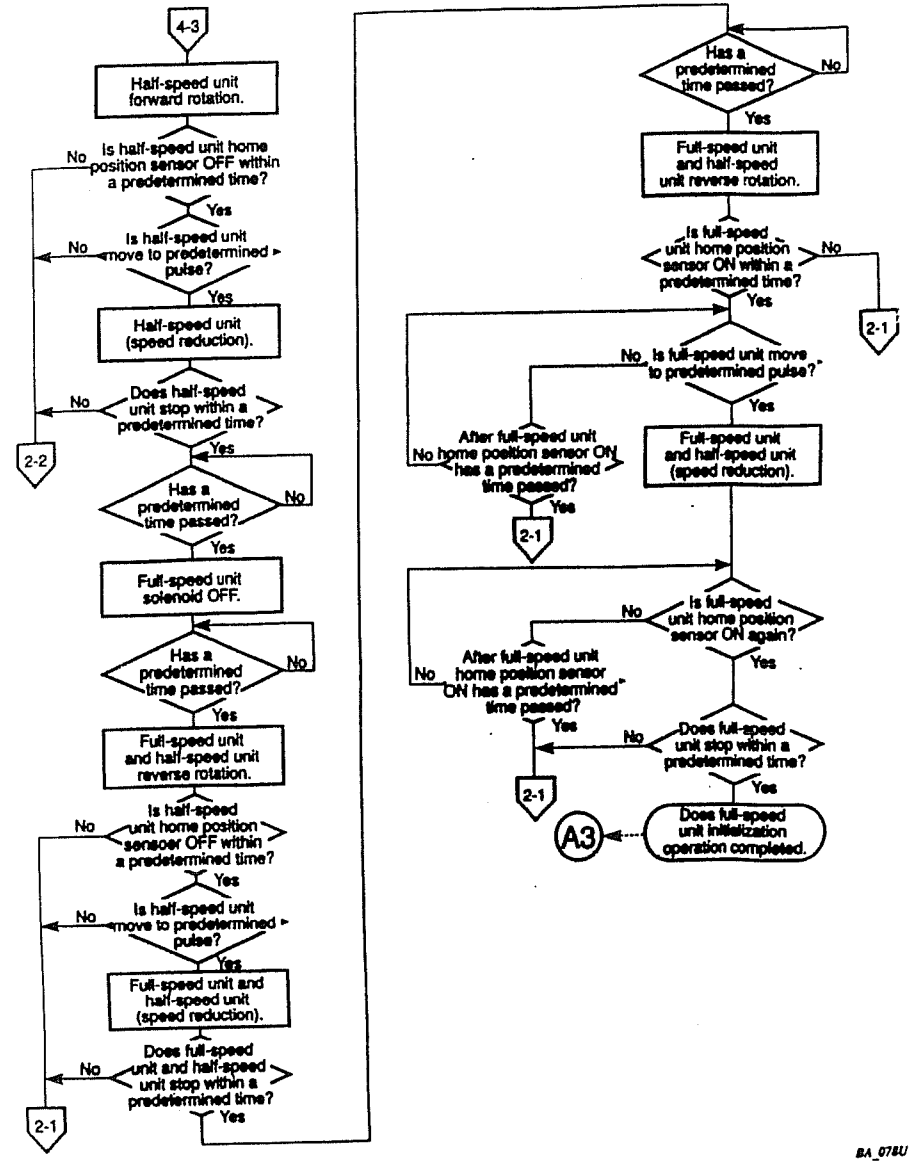
BA_074U


1-2
Drum initialization operation ended?
D1
Yes
Copy start?
No
Has a <predetermined time> passed?
No
Yes
24V (VCNT) power supply OFF.
Copy start?
No
Yes
Copy operation.
Optics system operation initialization operation.
A1
Full-speed unit initialization operation start.
A2
Full-speed unit unitialization operation ended?
No
A3
Yes
Half-speed unit initialization operation start.
A4
Half-speed unit initialization operation ended?
No
A5
Yes
No.5/6 mirror unit initialization operation start.
A6
No.5/6 mirror unit initialization operation ended?
No
A7
Yes
Optics system initialization operation completed.
A8
2-1
E1-01 error
All loads cut off
2-2
E1-21 error
All loads cut off
2-3
E1-22 error
All loads cut off
BA_075U

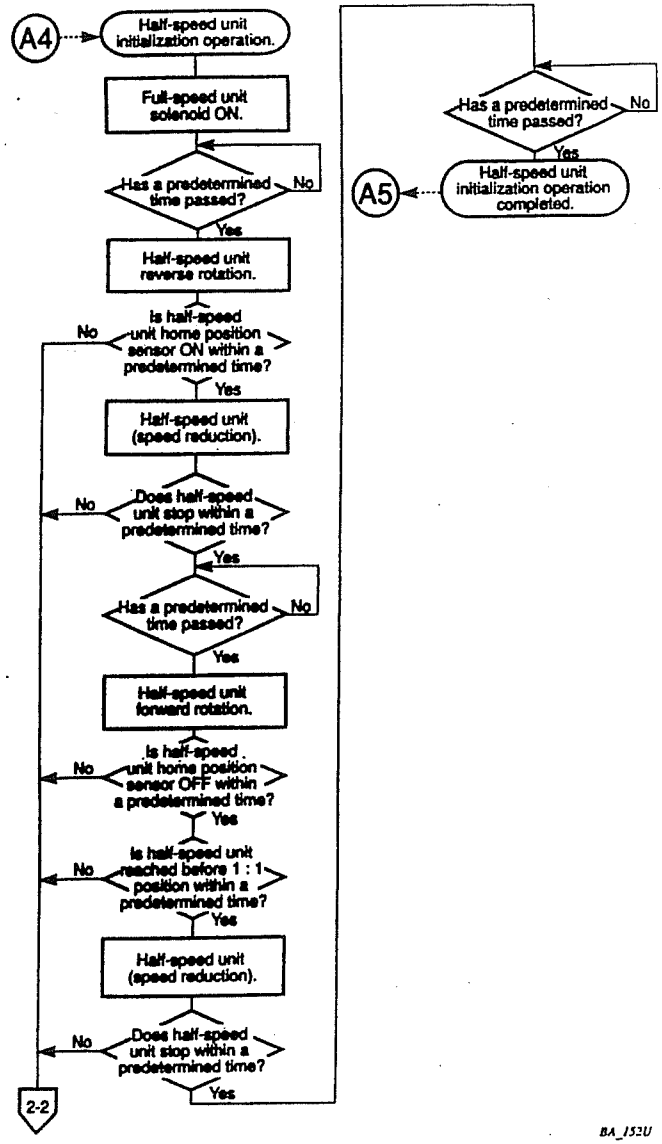

A2
Full-speed unit initialization operation.
Full-speed unit home position sensor ON?
Yes
No
4-1
Half-speed unit home position sensor ON?
Yes
No
4-2
Lamp unit scanner motor ON.
Has a <predetermined time> passed?
No
Yes
Full-speed unit and half-speed unit reverse rotation.
Is half-speed unit home position sensor ON within a predetermined time?
No
Yes
Is full-speed unit home position sensor ON within a predetermined time?
No
Yes
2-1
3-4
Full-speed unit and half-speed unit (speed reduction)
Does full-speed unit and half-speed unit stop within a predetermined time?
No
Yes
2-2
Has a <predetermined time> passed?
No
Yes
Full-speed unit solenoid ON.
Has a <predetermined time> passed?
No
Yes
3-1
Half-speed unit forward rotation.
Is half-speed unit home position sensor OFF within a predetermined time?
No
Yes
Is half-speed unit move to predetermined pulse?
No
Yes
Half-speed unit (speed reduction).
Does half-speed unit stop within a predetermined time?
No
Yes
2-2
Has a <predetermined time> passed?
No
Yes
Full-speed unit solenoid OFF.
Has a <predetermined time> passed?
No
Yes
Full-speed unit and half-speed unit severse rotation.
Is half-speed unit home position sensor OFF?
Yes
No
2-1
Is full-speed unit home position sensor ON?
No
Yes
3-1
Full-speed unit and half-speed unit (speed reduction).
Is full-speed unit move to predetermined pulse?
Yes
2-2
Does full-speed unit and half-speed unit stop within a predetermined time?
No
Yes
2-1
Has a <predetermined time> passed?
No
Yes
3-5

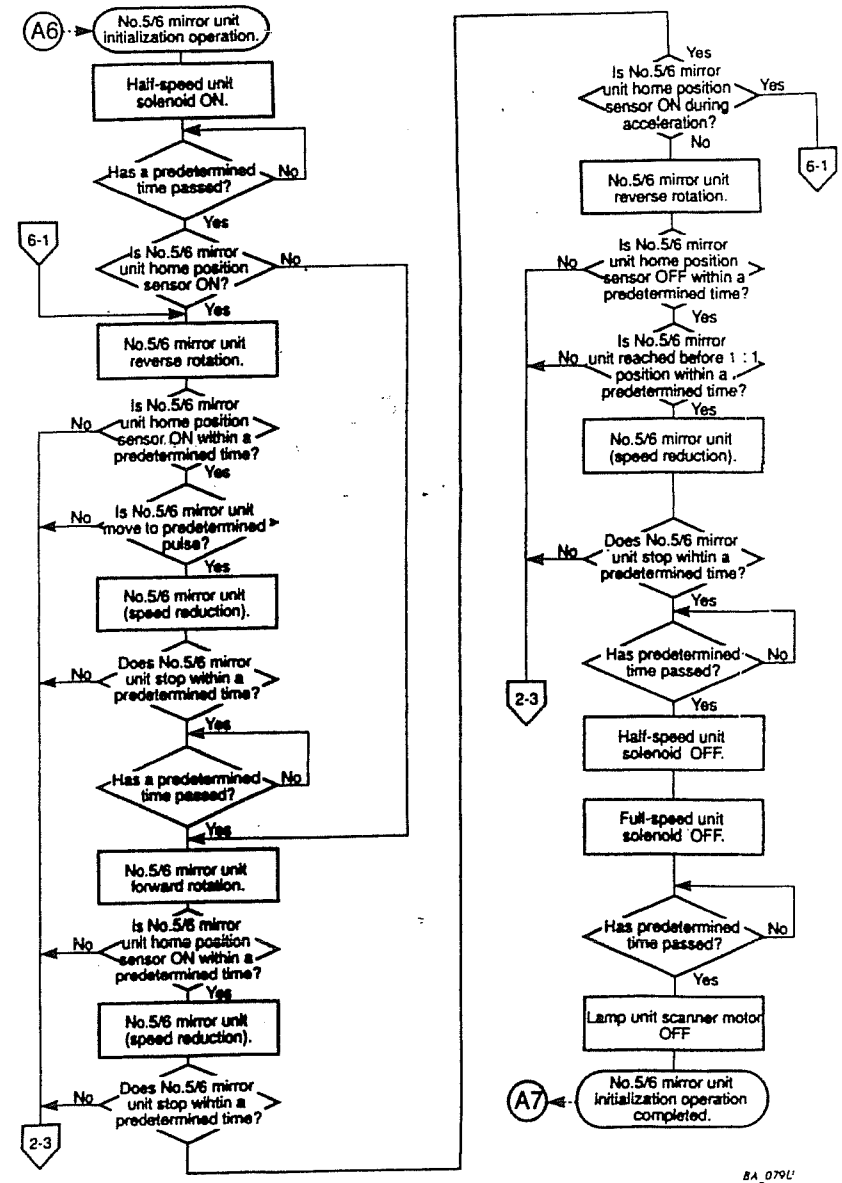


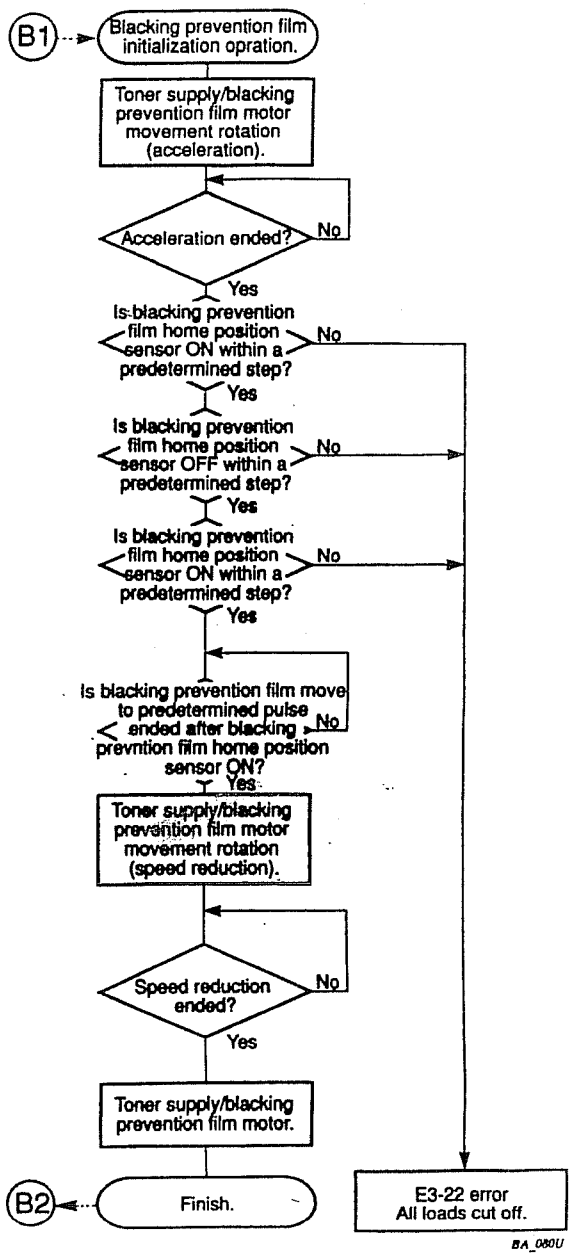
BA_077U

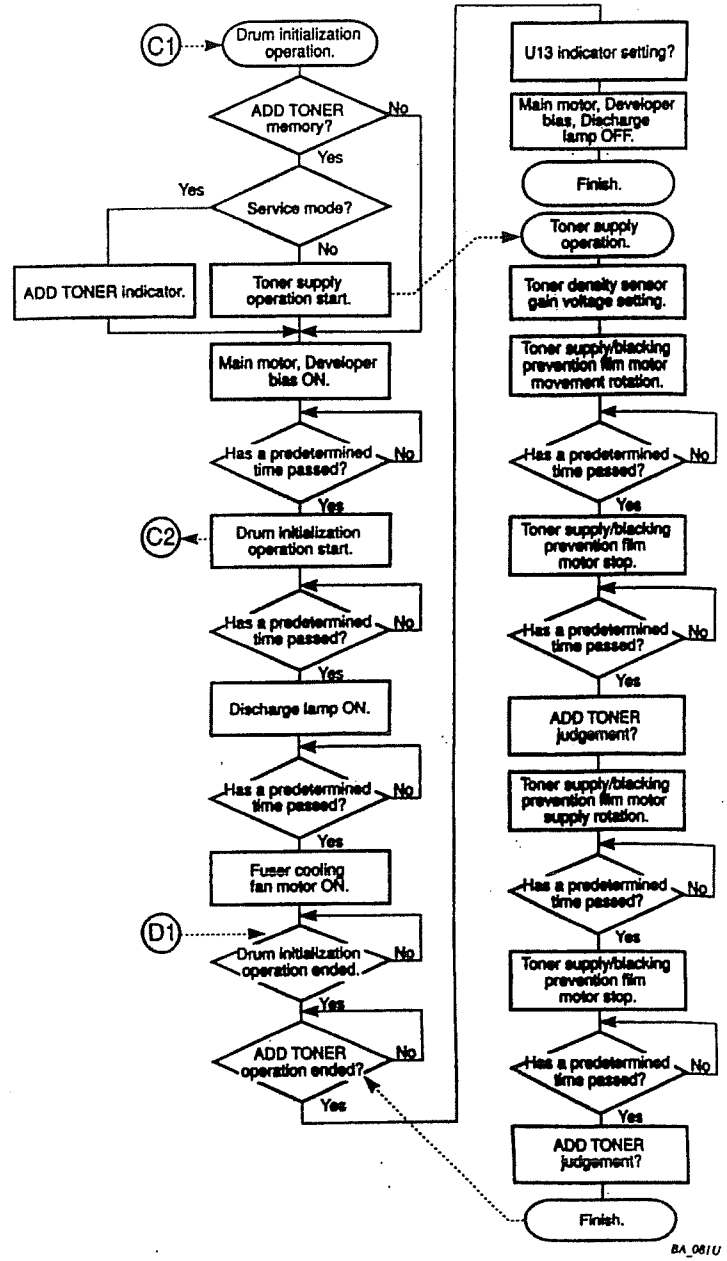


BA_078U

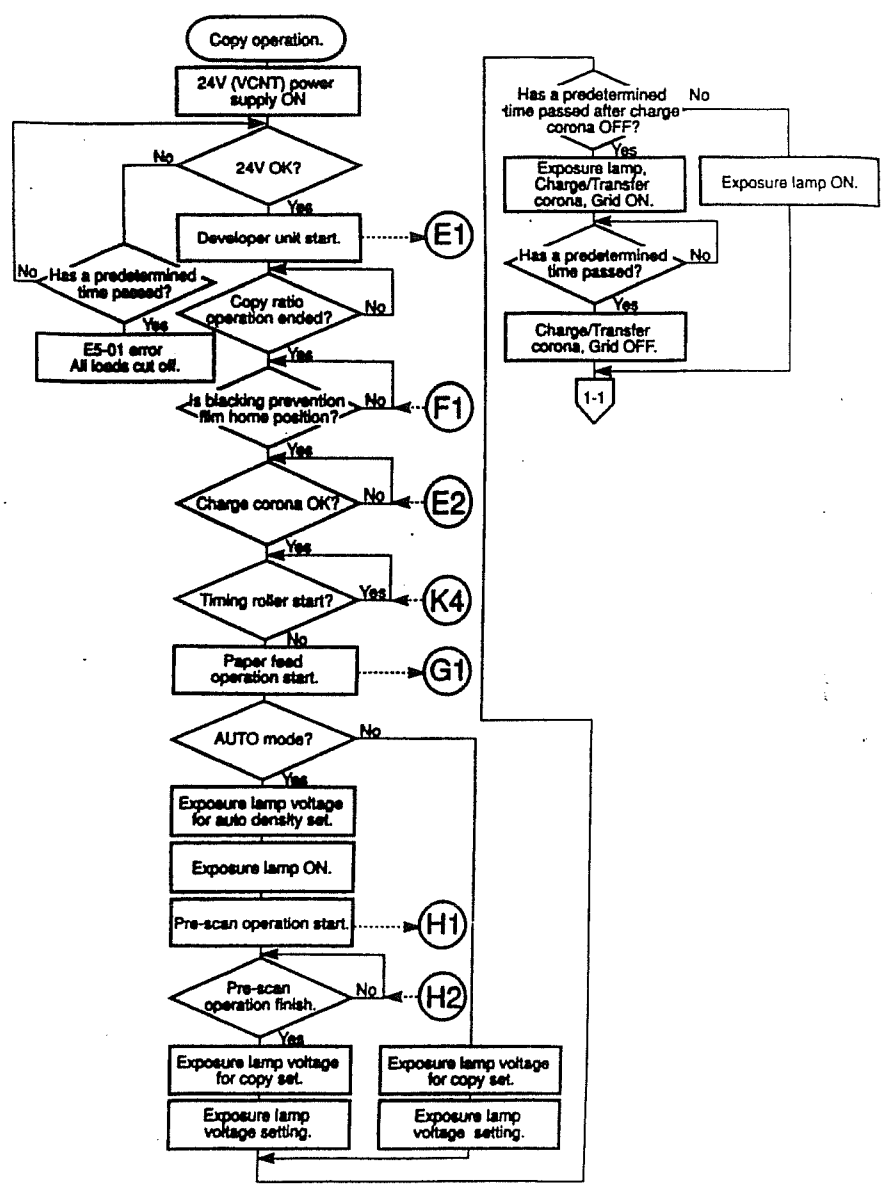

A4
Half-speed unit initialization operation.
Full-speed unit solenoid ON.
Has a predetermined time passed?
No
Yes
Half-speed unit reverse rotation.
Is half-speed unit home position sensor ON within a predetermined time?
No
Yes
Half-speed unit (speed reduction).
Does half-speed unit stop within a predetermined time?
No
Yes
Has a predetermined time passed?
No
Yes
Half-speed unit forward rotation.
Is half-speed unit home position sensor OFF within a predetermined time?
No
Yes
Is half-speed unit reached before 1 : 1 position within a predetermined time?
No
Yes
Half-speed unit (speed reduction).
Does half-speed unit stop within a predetermined time?
No
Yes
2-2
Has a predetermined time passed?
No
Yes
A5
Half-speed unit initialization operation completed.
BA_152U


A6
No.5/6 mirror unit initialization operation.
Half-speed unit solenoid ON.
Has a predetermined time passed?
No
Yes
6-1
Is No.5/6 mirror unit home position sensor ON?
No
Yes
No.5/6 mirror unit reverse rotation.
Is No.5/6 mirror unit home position sensor ON within a predetermined time?
No
Yes
Is No.5/6 mirror unit move to predetermined pulse?
No
Yes
No.5/6 mirror unit (speed reduction).
Does No.5/6 mirror unit stop within a predetermined time?
No
Yes
Has a predetermined time passed?
No
Yes
No.5/6 mirror unit forward rotation.
Is No.5/6 mirror unit home position sensor ON within a predetermined time?
No
Yes
No.5/6 mirror unit (speed reduction).
Does No.5/6 mirror unit stop within a predetermined time?
No
2-3
Yes
Is No.5/6 mirror unit home position sensor ON during acceleration?
Yes
No
6-1
No.5/6 mirror unit reverse rotation.
Is No.5/6 mirror unit home position sensor OFF within a predetermined time?
No
Yes
Is No.5/6 mirror unit reached before 1 : 1 position within a predetermined time?
No
Yes
No.5/6 mirror unit (speed reduction).
Does No.5/6 mirror unit stop within a predetermined time?
No
Yes
Has predetermined time passed?
No
Yes
2-3
Half-speed unit solenoid OFF.
Full-speed unit solenoid OFF.
Has predetermined time passed?
No
Yes
Lamp unit scanner motor OFF
A7
No.5/6 mirror unit initialization operation completed.
BA_079U

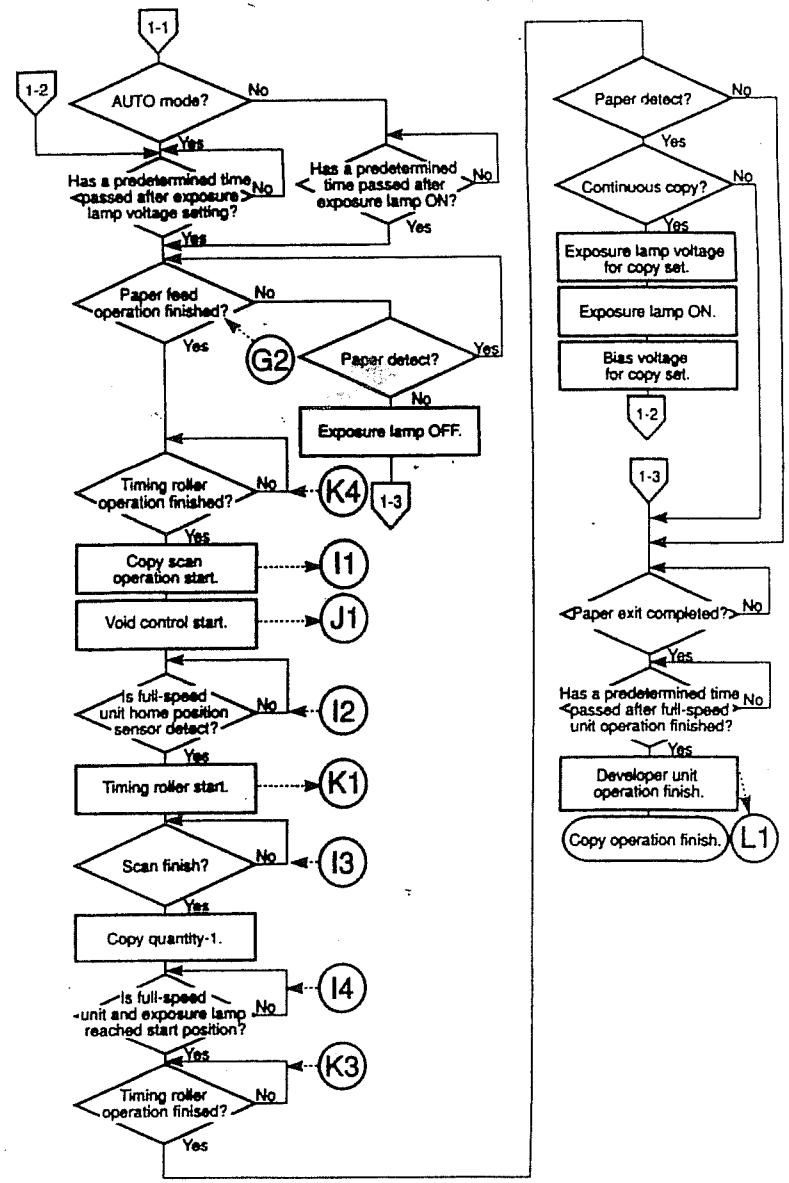

B1
Blacking prevention film initialization opration.
Toner supply/blacking prevention film motor movement rotation (acceleration).
Acceleration ended?
No
Yes
Is blacking prevention film home position sensor ON within a predetermined step?
No
Yes
Is blacking prevention film home position sensor OFF within a predetermined step?
No
Yes
Is blacking prevention film home position sensor ON within a predetermined step?
No
Yes
Is blacking prevention film move to predetermined pulse ended after blacking prevntion film home position sensor ON?
No
Yes
Toner supply/blacking prevention film motor movement rotation (speed reduction).
Speed reduction ended?
No
Yes
Toner supply/blacking prevention film motor.
B2
Finish.
E3-22 error
All loads cut off.
BA_080U


C1
Drum initialization operation.
ADD TONER memory?
No
Yes
Yes
Service mode?
No
ADD TONER indicator.
Toner supply operation start.
Main motor, Developer bias ON.
Has a predetermined time passed?
No
Yes
C2
Drum initialization operation start.
Has a predetermined time passed?
No
Yes
Discharge lamp ON.
Has a predetermined time passed?
No
Yes
Fuser cooling fan motor ON.
D1
Drum initialization operation ended.
No
Yes
ADD TONER operation ended?
No
Yes
U13 indicator setting?
Main motor, Developer bias, Discharge lamp OFF.
Finish.
Toner supply operation.
Toner density sensor gain voltage setting.
Toner supply/blacking prevention film motor movement rotation.
Has a predetermined time passed?
No
Yes
Toner supply/blacking prevention film motor stop.
Has a predetermined time passed?
No
Yes
ADD TONER judgement?
Toner supply/blacking prevention film motor supply rotation.
Has a predetermined time passed?
No
Yes
Toner supply/blacking prevention film motor stop.
Has a predetermined time passed?
No
Yes
ADD TONER judgement?
Finish.
BA_081U

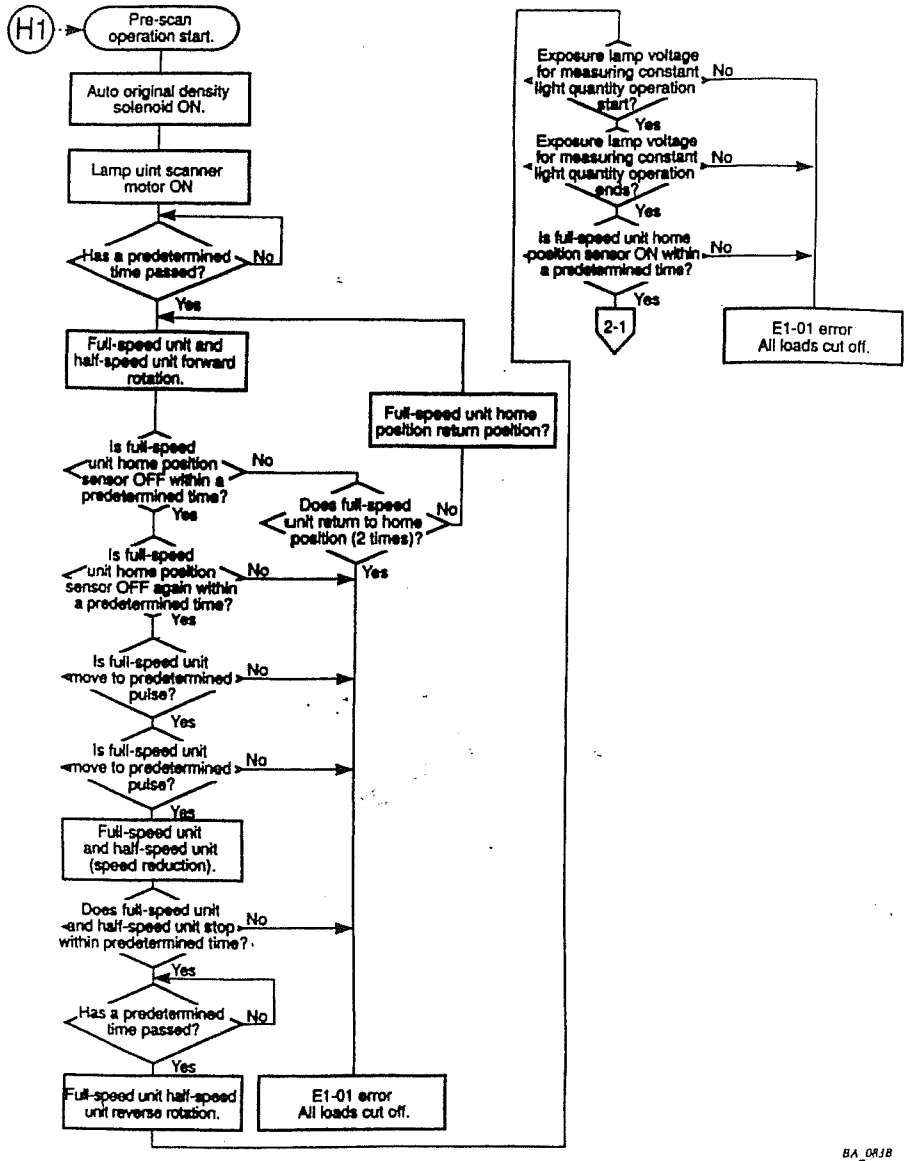
2. Copy operation



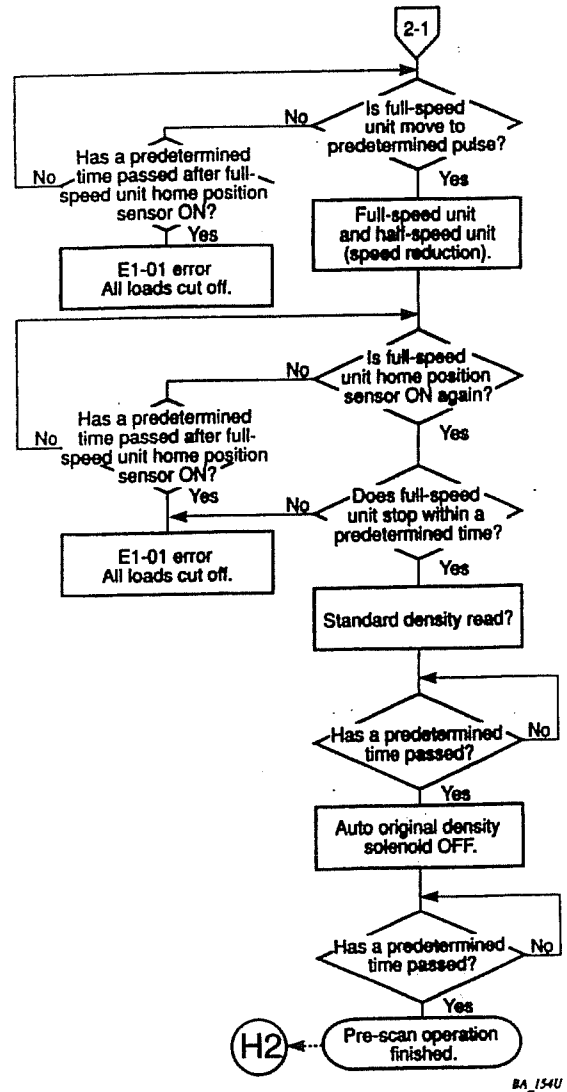
BA_082C



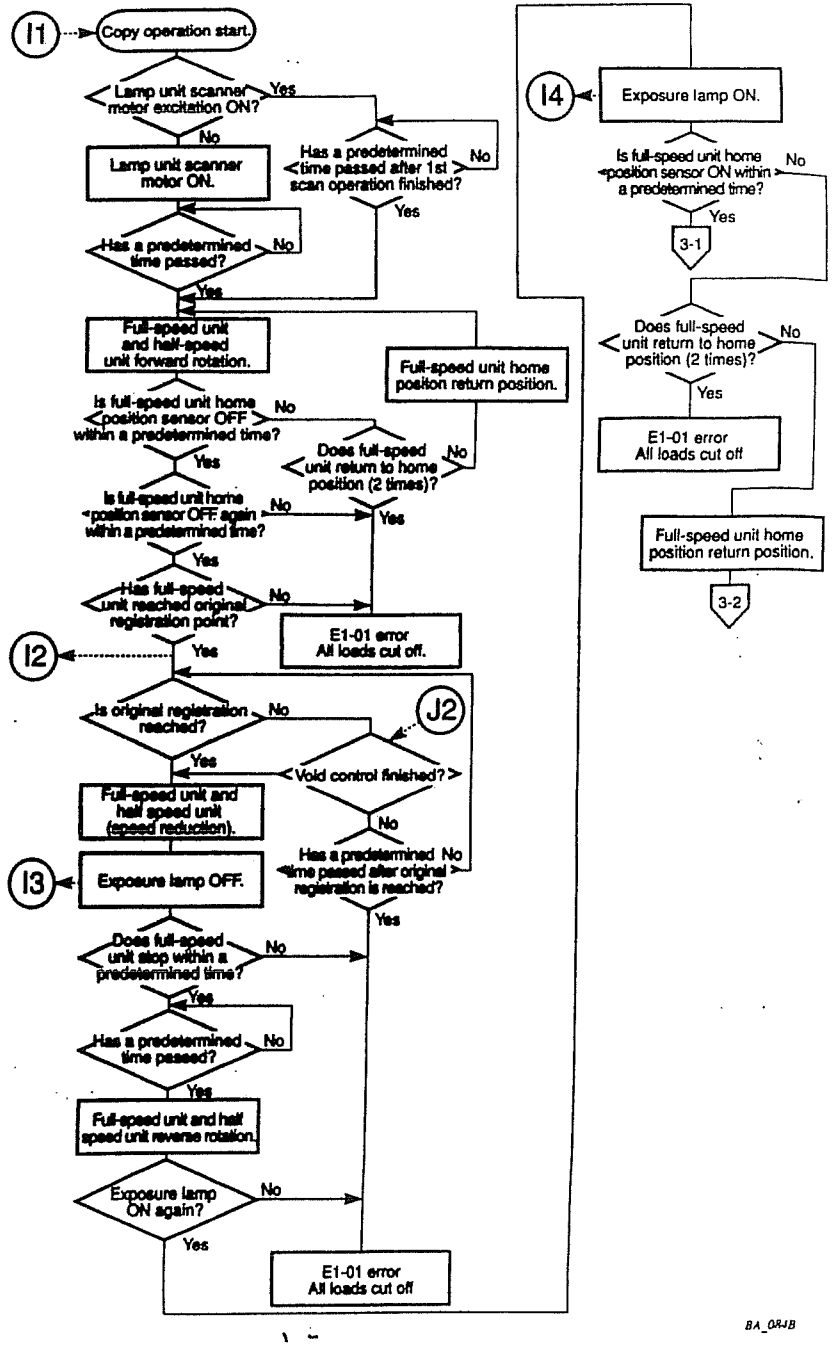
BA_153C



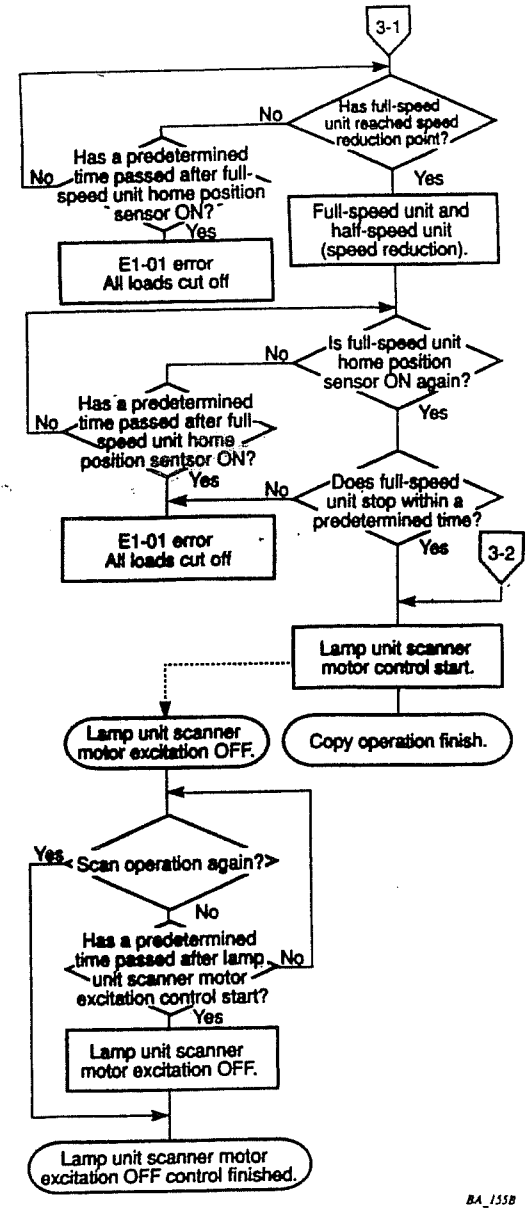
BA_0R3B



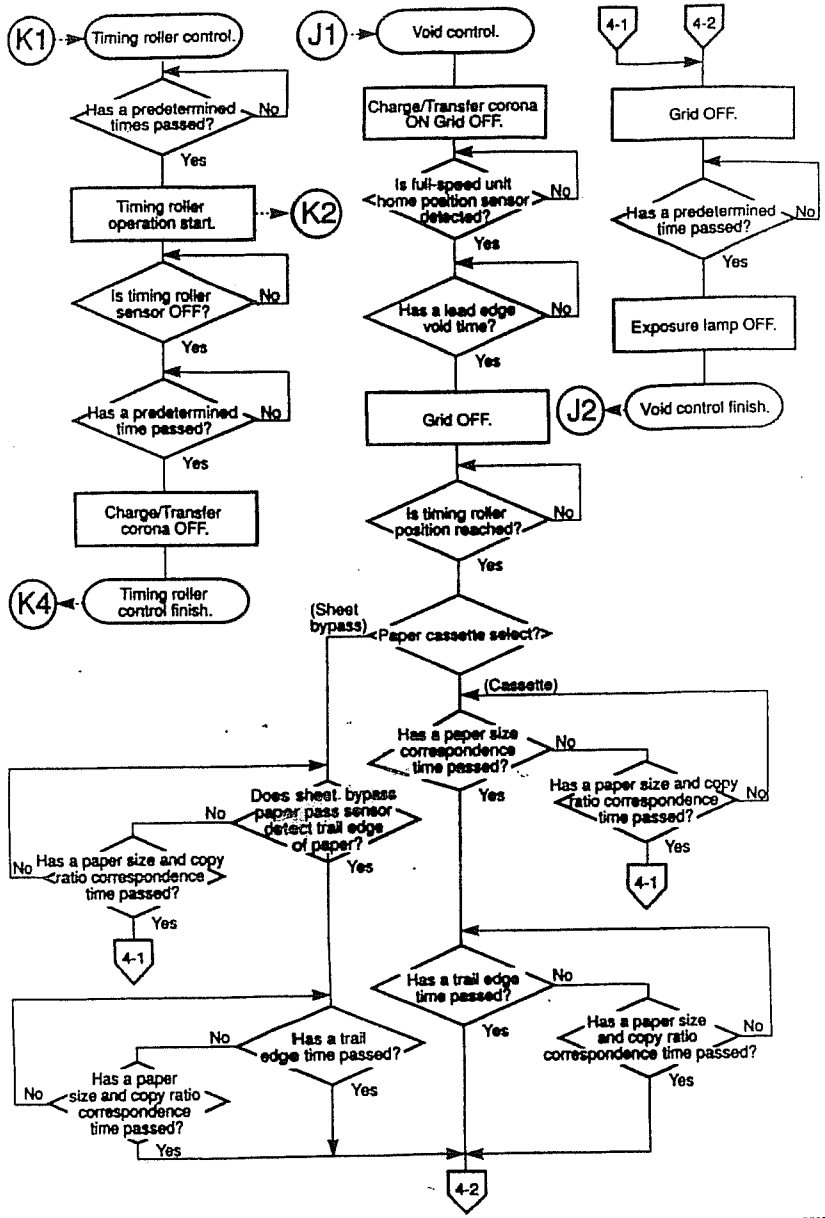
BA_154U

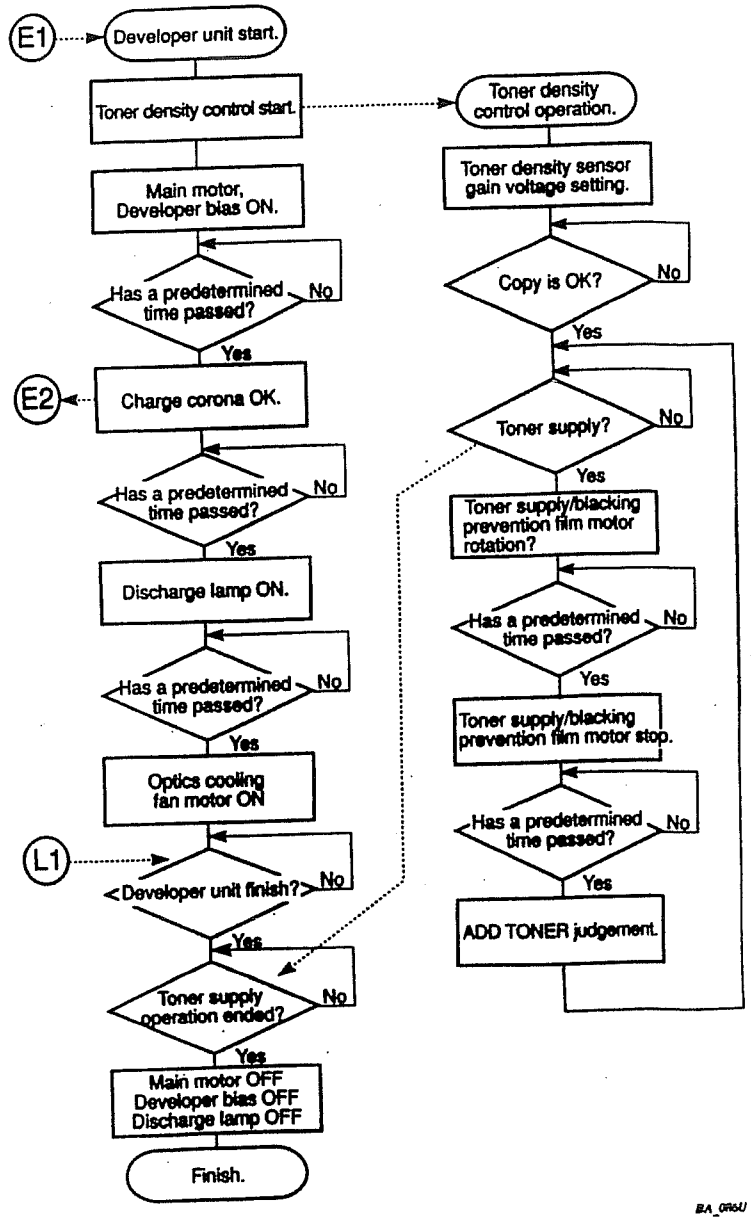


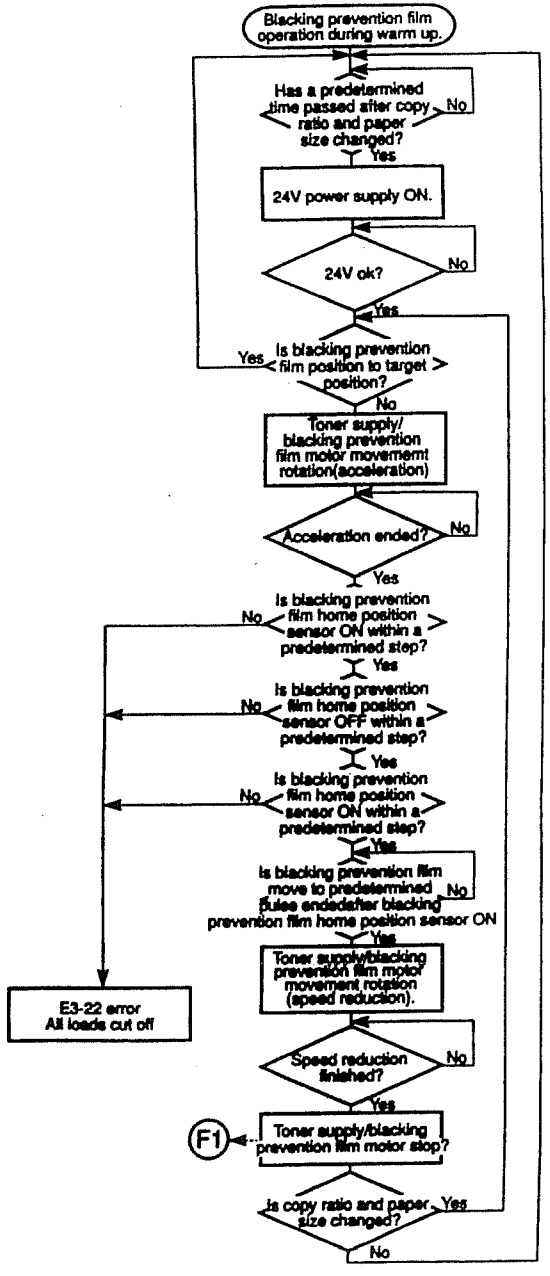
BA_0R4B

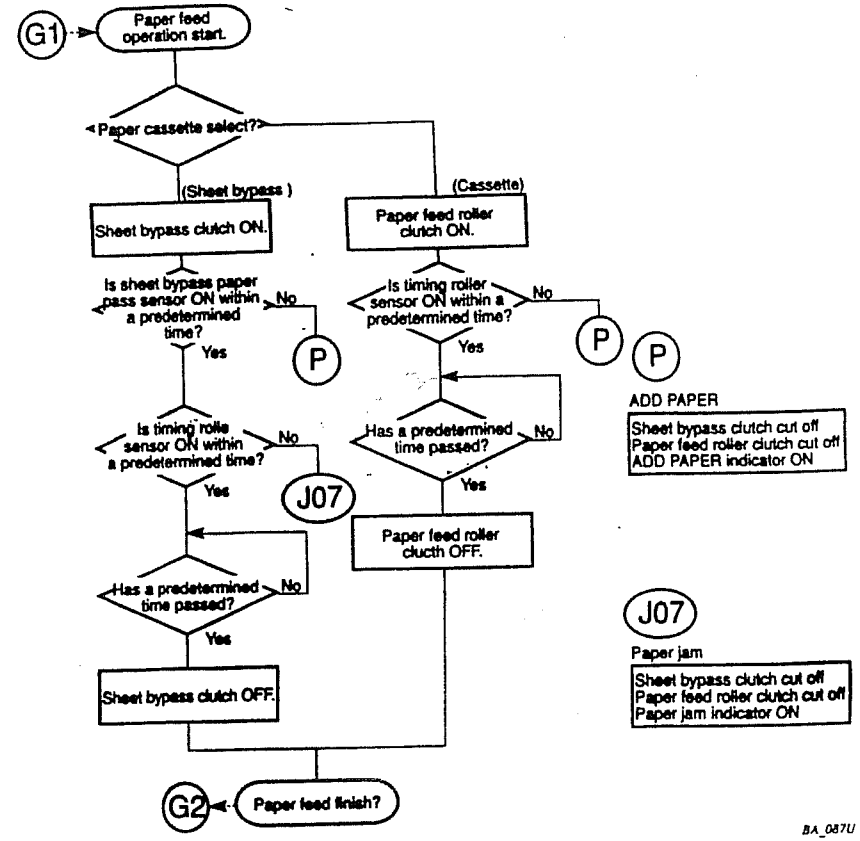


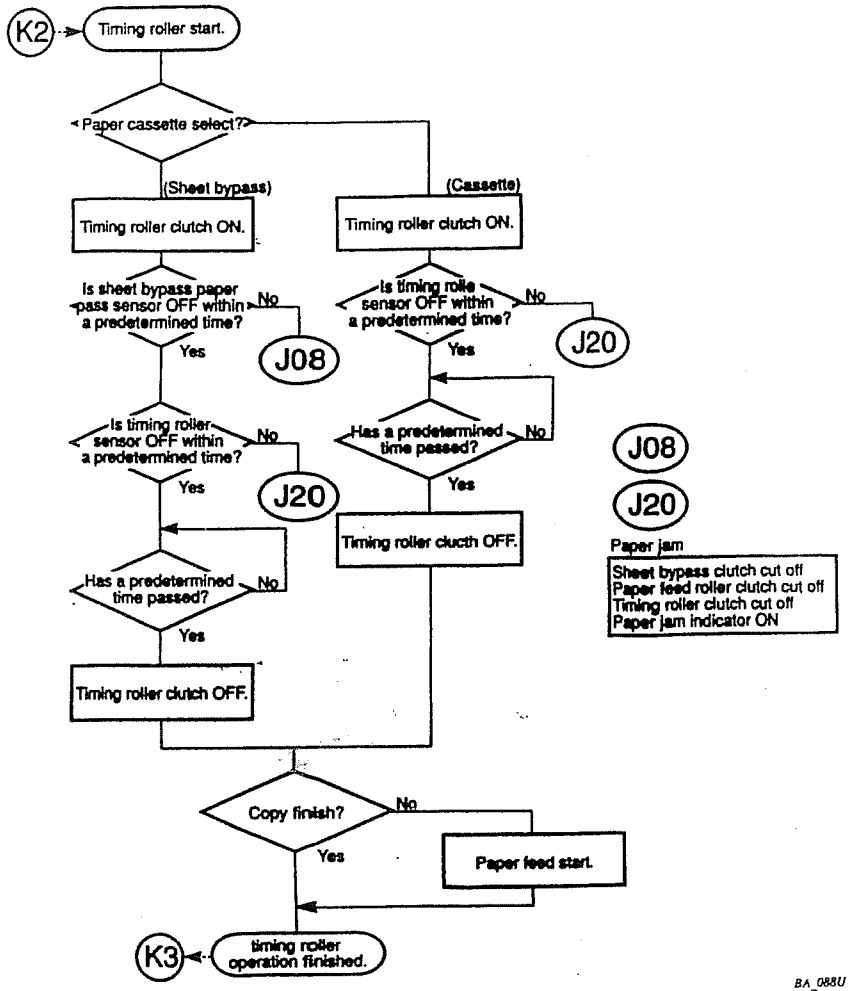
BA_155B


K1
Timing roller control.
Has a predetermined times passed?
No
Yes
Timing roller operation start.
K2
Is timing roller sensor OFF?
No
Yes
Has a predetermined time passed?
No
Yes
Charge/Transfer corona OFF.
K4
Timing roller control finish.
J1
Void control.
Charge/Transfer corona ON Grid OFF.
Is full-speed unit <home position sensor detected?
No
Yes
Has a lead edge void time?
No
Yes
Grid OFF.
Is timing roller position reached?
No
Yes
(Sheet bypass)
Paper cassette select?>
(Cassette)
Has a paper size correspondence time passed?
No
Yes
Has a paper size and copy ratio correspondence time passed?
No
Yes
4-1
Does sheet bypass paper pass sensor detect trail edge of paper?
No
Yes
No
Has a paper size and copy ratio correspondence time passed?
Yes
4-1
Has a trail edge time passed?
No
Yes
No
Has a trail edge time passed?
Yes
No
Has a paper size and copy ratio correspondence time passed?
Yes
No
Has a paper size and copy ratio correspondence time passed?
Yes
4-2
4-1
4-2
Grid OFF.
Has a predetermined time passed?
No
Yes
Exposure lamp OFF.
J2
Void control finish.
BA_085U


E1
Developer unit start.
Toner density control start.
Main motor, Developer bias ON.
Has a predetermined time passed?
No
Yes
E2
Charge corona OK.
Has a predetermined time passed?
No
Yes
Discharge lamp ON.
Has a predetermined time passed?
No
Yes
Optics cooling fan motor ON
L1
<Developer unit finish?
No
Yes
Toner supply operation ended?
No
Yes
Main motor OFF
Developer bias OFF
Discharge lamp OFF
Finish.
Toner density control operation.
Toner density sensor gain voltage setting.
Copy is OK?
No
Yes
Toner supply?
No
Yes
Toner supply/blacking prevention film motor rotation?
Has a predetermined time passed?
No
Yes
Toner supply/blacking prevention film motor stop.
Has a predetermined time passed?
No
Yes
ADD TONER judgement.
BA_086U


Blacking prevention film operation during warm up.
Has a predetermined time passed after copy ratio and paper size changed?
No
Yes
24V power supply ON.
24V ok?
No
Yes
Yes
Is blacking prevention film position to target position?
No
Toner supply/ blacking prevention film motor movement rotation(acceleration)
Acceleration ended?
No
Yes
No
Is blacking prevention film home position sensor ON within a predetermined step?
Yes
No
Is blacking prevention film home position sensor OFF within a predetermined step?
Yes
No
Is blacking prevention film home position sensor ON within a predetermined step?
Yes
Is blacking prevention film move to predetermined pulse endedafter blacking prevention film home position sensor ON
No
Yes
Toner supply/blacking prevention film motor movement rotation (speed reduction).
E3-22 error
All loads cut off
Speed reduction finished?
No
Yes
F1
Toner supply/blacking prevention film motor stop?
Is copy ratio and paper size changed?
Yes
No
BA_151U


G1
Paper feed operation start.
Paper cassette select?
(Sheet bypass)
(Cassette)
Sheet bypass clutch ON.
Paper feed roller clutch ON.
Is sheet bypass paper pass sensor ON within a predetermined time?
No
Yes
Is timing roller sensor ON within a predetermined time?
No
Yes
P
P
P
ADD PAPER
Sheet bypass clutch cut off
Paper feed roller clutch cut off
ADD PAPER indicator ON
Is timing rolle sensor ON within a predetermined time?
No
Yes
J07
Has a predetermined time passed?
No
Yes
Paper feed roller clucth OFF.
Has a predetermined time passed?
No
Yes
J07
Paper jam
Sheet bypass clutch cut off
Paper feed roller clutch cut off
Paper jam indicator ON
Sheet bypass clutch OFF.
G2
Paper feed finish?
BA_087U



BA_088U

4.2 General (PCBs)

Listed below are PCBs (Printed Circuit Boards) and major electrical components along with a brief description of their operation and functions.

1. **CPU PCB**
   The CPU PCB performs the majority of machine logic. The CPU PCB uses one microprocessor to perform electrical/mechanical sequence operations. This PCB controls the microprocessor circuit, exposure lamp circuit, fuser temperature control circuit. The triangular wave circuit controls the exposure level. The stepping motor drive control input (ON/OFF, Forward/Reverse, Copy size ratio signal) are on the CPU PCB and perform the related high power switching. The CPU PCB is supplied with +24VDC from the LVPS PCB to regulate a +10VDC circuit to operate the CPU.

2. **Low voltage power supply PCB**
   This board supplies low voltage. The low voltage power supply circuits supply stabilized +5VDC and +24VDC. +5VDC operates CPU PCB. The +24VDC operates solenoids, main motor and lens unit scanner motor. This board supplies the operational circuits for the exposure lamp, and fuser lamp. The zero cross generation circuit is supplied to the CPU PCB.

3. **High voltage power supply PCB**
   The high voltage power supply has six functions. It supplies the charge corona (for Document and Photo mode) and transfer corona with high voltage DC, and the magnetic brush with a bias voltage. It also supplies grid voltage and shield current. It supplies the Discharge saw with high voltage DC.

4. **Optics driver PCB**
   This PCB controls the lamp unit scanner motor drive circuit, fan motor, each sensor and each solenoid for the copy ratio control circuit.

5. **Control panel PCB**
   Control panel for the LED section allows the operator to monitor the operation of the copier. It indicates for example, the selected amount of copies, selected paper size, zoom, copy ratio, and selected exposure lamp levels, etc, using the LED display and appropriate keys.

4.3 Description of circuits

1. Triangular wave generating circuit

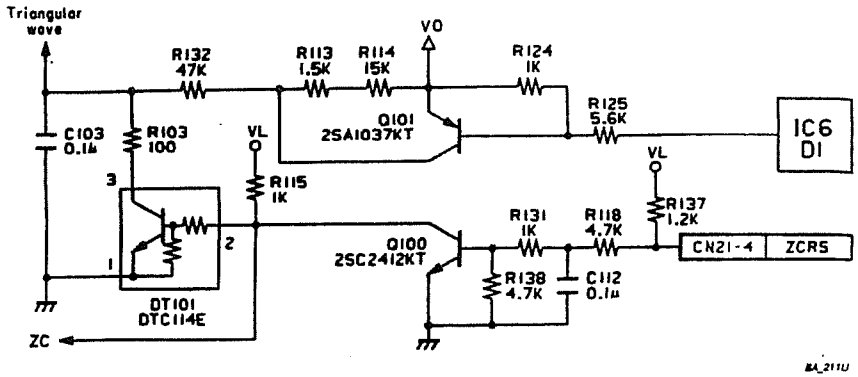


Figure 4-22-1

The CPU PCB generates triangular waves that are synchronized with the power supply wave forms (two times the frequency) and supplied to the exposure lamp control circuit to perform phase control. The circuit construction is shown in figure 4-22-1. ZCRS is a full-wave rectified AC pulse with a frequency twice the power supply frequency. Q100 and DT101 are turned ON/OFF by ZCRS, while the triangular waves are generated by the intergrated circuit comprised of R113, R114, R132 and C103. Frequency control signal is always "Low" level and Q102 is always a "ON". The operational time of the triangular wave generating circuit is shown in figure 4-22-2.

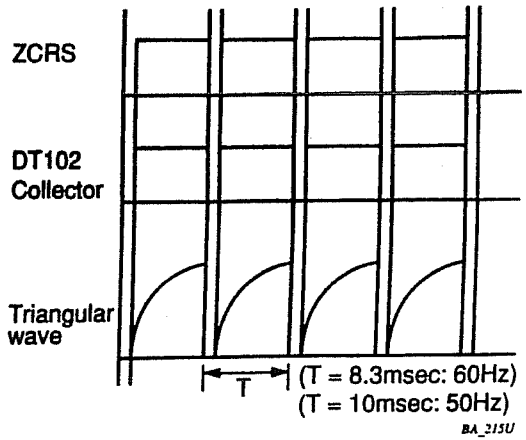


Figure 4-22-2

2. Fuser temperature control circuit

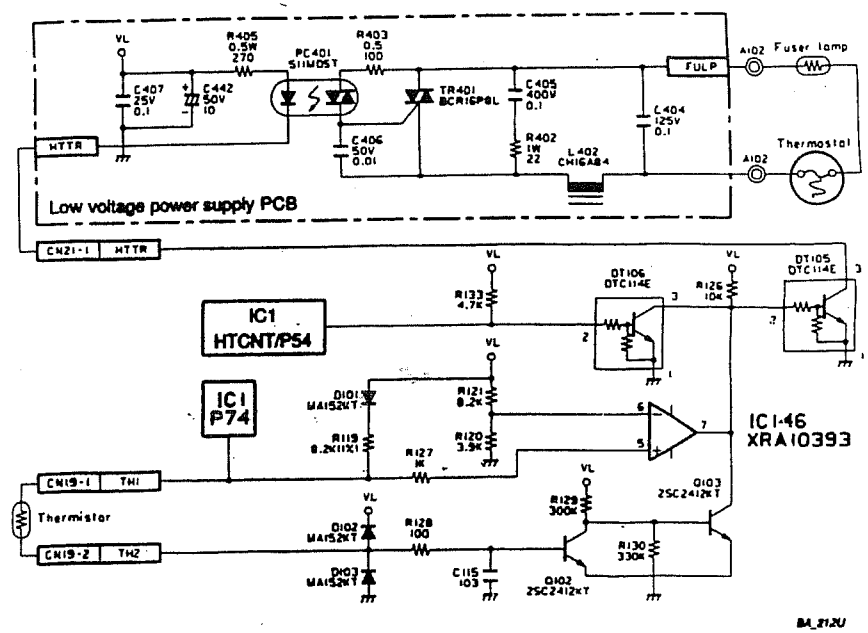


Figure 4-23-1

The CPU PCB fuser temperature control circuit turns the fuser lamp on when the fuser temperature falls below the specified temperature and turns the lamp off when it exceeds the operating temperature. The functions of this circuit are:

- Fuser temperature control.
- Detection of thermistor circuit.
- Turns the fuser off during a copier malfunction.

If the fuser temperature drops below the set level, a "High" level signal is output through terminal HTCNT of IC1, the transistor ("High" level ON) of DT105 turns ON, and the fuser lamp is turned on by the operation of PC401 on low voltage power supply PCB. As the fuser temperature reaches its set level, terminal HTCNT of IC1 is switched to a "Low" level by the change in resistance of the thermistor.

Transistor DT105 turns OFF, and the fuser lamp goes out. In this way, the fuser temperature is maintained at a constant level. The temperature is detected by the thermistor by inputting the voltage (+5V) that is generated as a power supply into IC1.

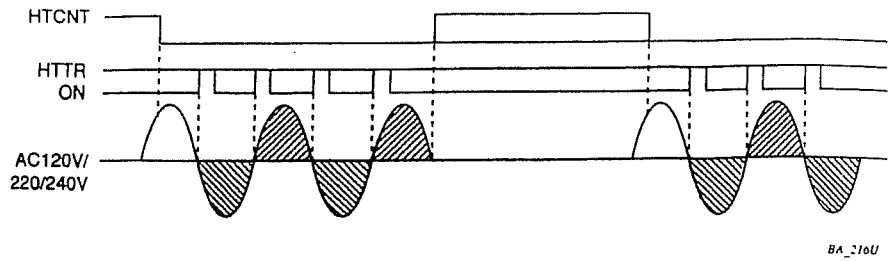


Figure 4-24-1

If the thermistor develops burnout, transistor Q102 turns OFF, transistor Q103 turns ON, and the base(B) of DT105 becomes a "Low" level, ensuring that transistor DT105 doesn't turn ON and prevents the fuser lamp from lighting. If fuser temperature rises abnormally due to faults (other than burnout) of the thermistor, etc, the change in voltage (inverse input terminal side) of the positive terminal of IC146 causes the base(B) of DT105 to become a "Low" level, preventing transistor DT105 from turning ON and turning OFF the fuser lamp and therefore protects the fuser unit from damage.

3. Exposure lamp control circuit

The CPU PCB controls the ON/OFF signal and intensity of the exposure lamp. The ON/OFF signal from the CPU is IC2(LPCNT1) (Exposure lamp control signal). When the PRINT key is pressed, the exposure lamp control signal goes "High" until the end of scan. During return scan, the exposure lamp control signal is "Low" until copy end.
Transformer (T401) is connected in parallel with the exposure lamp and feeds back the applied voltage signal on the exposure lamp to the CPU PCB. The circuit construction is shown in figure 4-25-1.

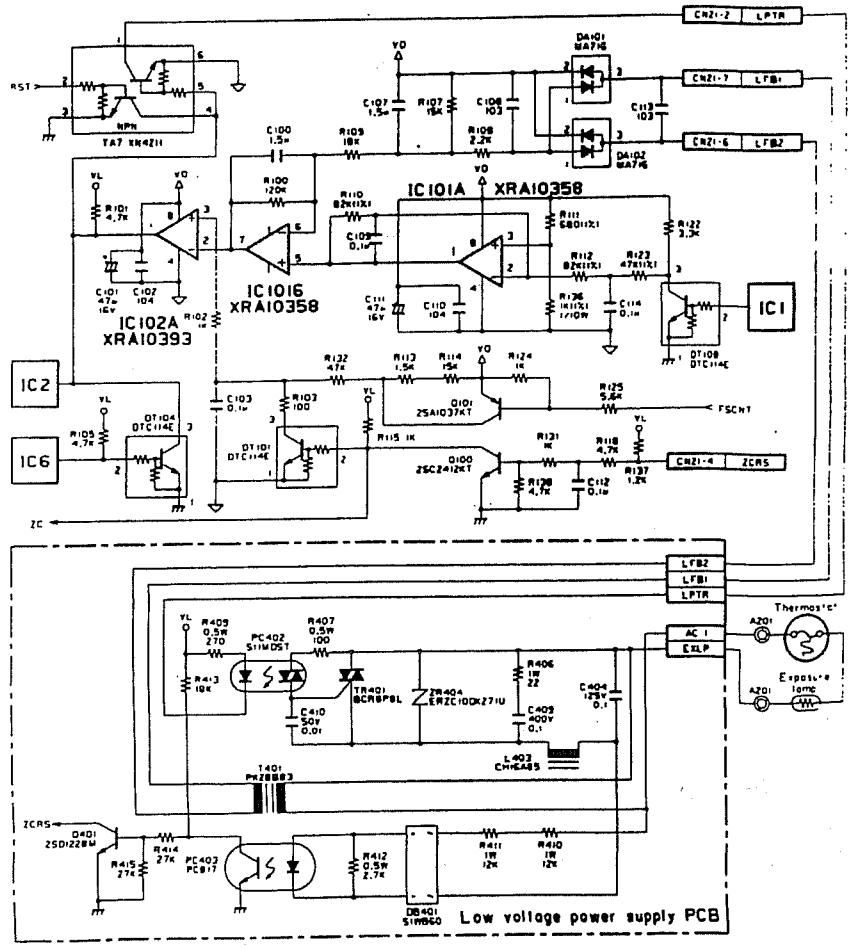


Figure 4-25-1

The secondary voltage of the transformer is full wave-rectified by DA101 and DA102 after being divided by R107 and R108 and filtered by C102 into DC waveforms. One of the DC waveforms is connected to +10V, and the other is connected to the non-inverted input terminal of IC1016 (opamplifier) through R109.

When TA7 turns ON, PC402 is activated to light the exposure lamp. The light exposure amount is varied by varying the signal sent from IC2 by means of the voltage at the inverted input terminal of IC101A. A change in the exposure amount occurs in the following cases.

a. When the exposure control keys on the control panel are pressed.
b. When the PHOTO Mode key on control panel is selected.
c. When reduction, 1:1 and enlargement keys are pressed.

IC1016 amplified voltage goes to the inverted input terminal of IC102A, then it is compared with the triangular waveforms at the non-inverted input terminal of IC102A. The output of IC102A, an open collector type comparator pulled up by R105, enters into the base of TA7. When TA7 is in the ON state, the exposure lamp lights. In normal operation, when the exposure lamp control signal is "High", LPTR (Trigger signal for exposure lamp) is transmitted by switching TA7 from the output of IC102A. The operational time of exposure lamp control circuit is shown in figure 4-26-1.

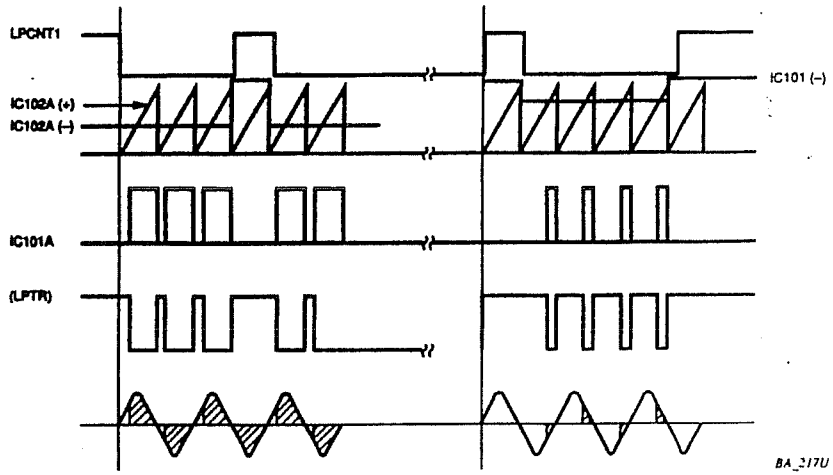


Figure 4-26-1

4. Auto original density control circuit

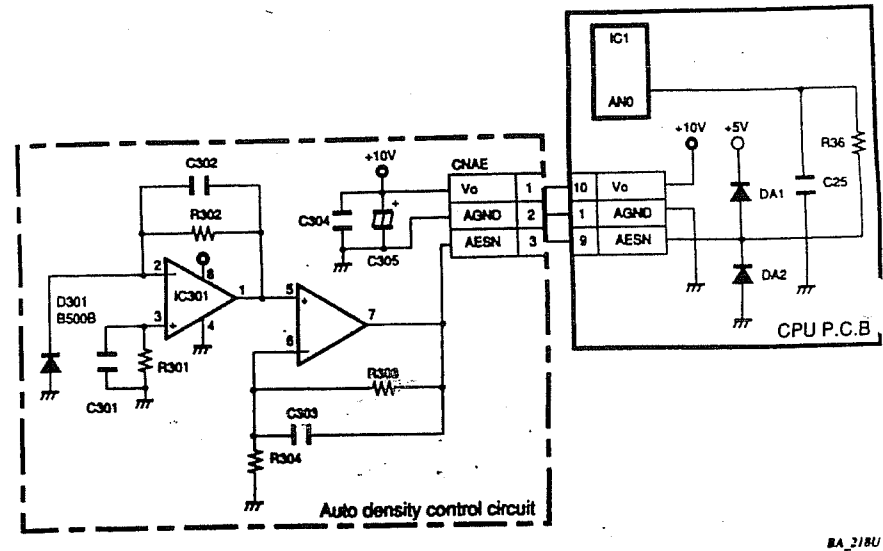


Figure 4-27-1

This circuit of the CPU PCB detects the original density by comparing the signal received from the auto original density sensor with the reference voltage. It reads the light reflected from original during pre-scan with the sensor of D301 and outputs it as AESN (Auto original density sensor signal). If the original density is dark, the output of the auto original density sensor goes "Low". If the original density is light, it goes "High"; AESN is output, and it is then input into AN1 of IC1. In this way, the density levels of the original and reference pattern are read, computation is performed, and the exposure level is regulated accordingly, and image density is controlled.

5. Main motor control circuit

This circuit is located on the main motor. The main motor is controlled by (PLL) phase comparison, according to the reference frequency prepared by the crystal oscillator. Figure 4-29-1 shows a block diagram of IC, Figure 4-28-1 shows a circuit diagram and Figure 4-30-1 shows a waveform. The speed sensor matched to the speed of the main motor, is input and waveform shaping (waveform of Ⓐ) into ④ and ⑤ of IC. This pulse is signal-processed inside the IC; if the speed is fast, the analog voltage of ㉖ rises; if slow, it drops (waveform of Ⓑ). This analog voltage is compared with a chopping wave (waveform of Ⓒ), and the drive circuit is kept ON, allowing current to flow to the motor until the voltage of the chopping wave becomes higher. As a result, the duty of the output becomes small, supplying additional current to the motor, when the load of the motor is heavy (waveform of Ⓔ). Because the main motor is a brushless motor, the rotor position is detected by the built-in hall element H1, H2 and H3 and the electric current of each phase is sent in order. Consequently, the output waveform of ⑧, ⑨, and ⑩ drivers are matched to the waveform of Ⓕ of Figure 4-30-1. The duty becomes large, supplying less current to the motor when the load is light. The current control circuit in the Ⓖ of Figure 4-29-1 ensures that no more than 3A of current flows to the motor, when it starts or if the motor is in a locked condition. When the motor is stopped, the CPU sets the MMCNT high, and turns OFF the drive circuit. If the frequency of the speed sensor of waveform of Ⓐ of Figure 4-30-1 is within ± 6% of the prescribed value, the MMLCK goes "Low", while others turn "High". If the motor speed becomes abnormal, the CPU detects this signal and displays machine error.

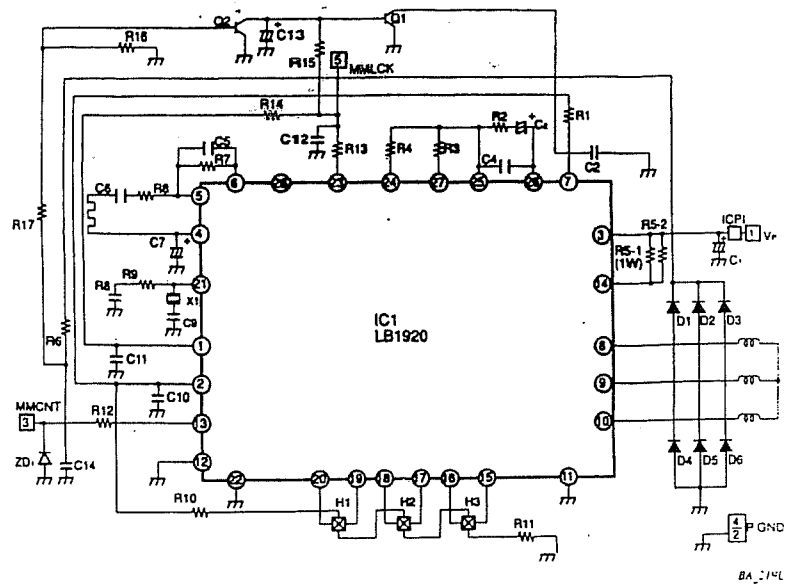


Figure 4-28-1

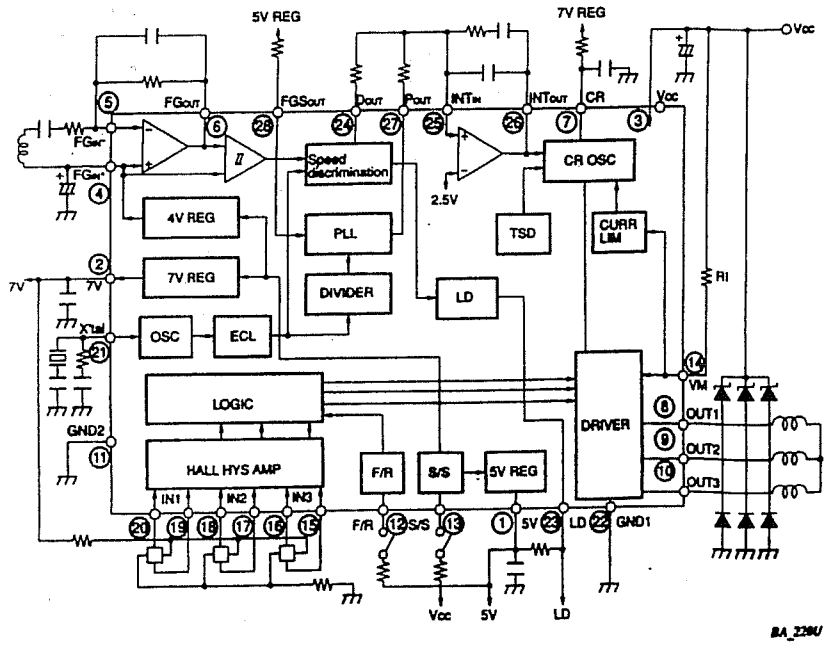


Figure 4-29-1

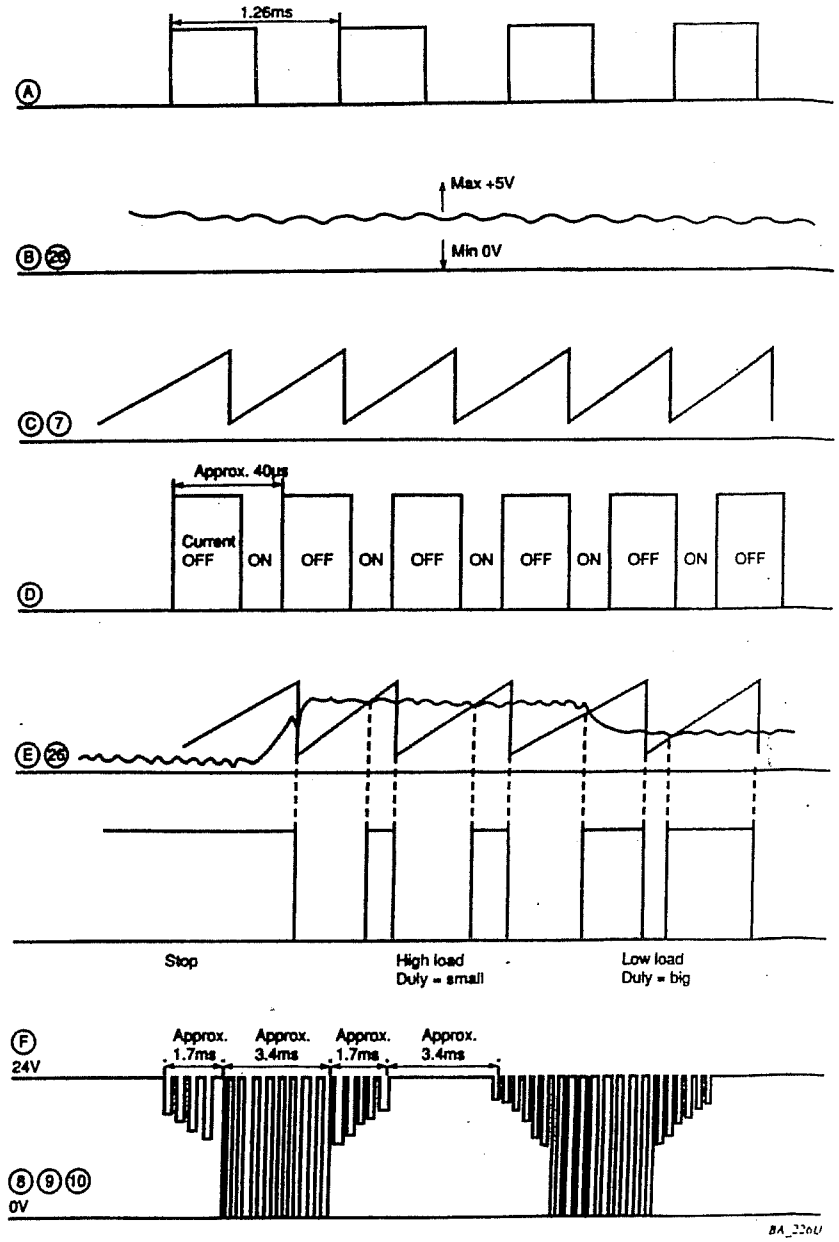


Figure 4-30-1

6. Lamp unit scanner motor control circuit

The lamp unit scanner motor is a 4-phase stepping motor driven by constant-current. A block diagram of this circuit is shown in Figure 4-31-2. The steppin motor is rotated by exciting phases A→B→$\bar{A}$→$\bar{B}$, in this order. By exciting phases in reverse order, the motor rotates in the reverse direction (Figure 4-32-1). In the driver of IC651, the set value of current is determined by the reference voltage that is divided by R659 and R661. If the motor current exceeds this set current value at the time of motor excitation, the driver turns OFF.

Excitation is done by repeatedly turning the driver ON/OFF in this way (Figur 4-32-2).

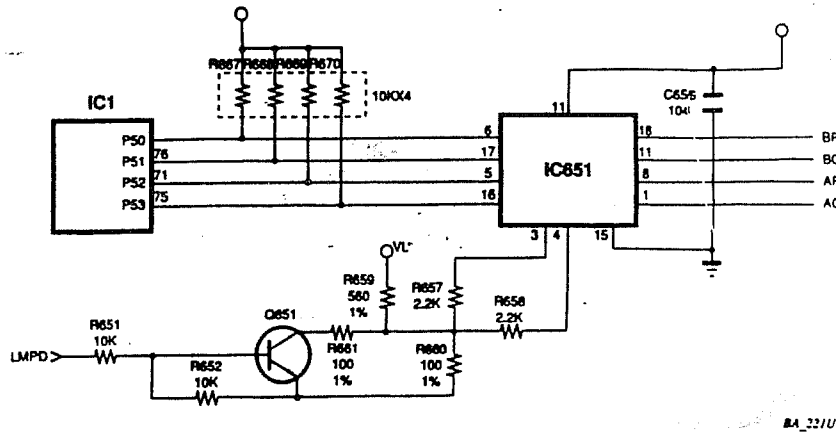


Figure 4-31-1

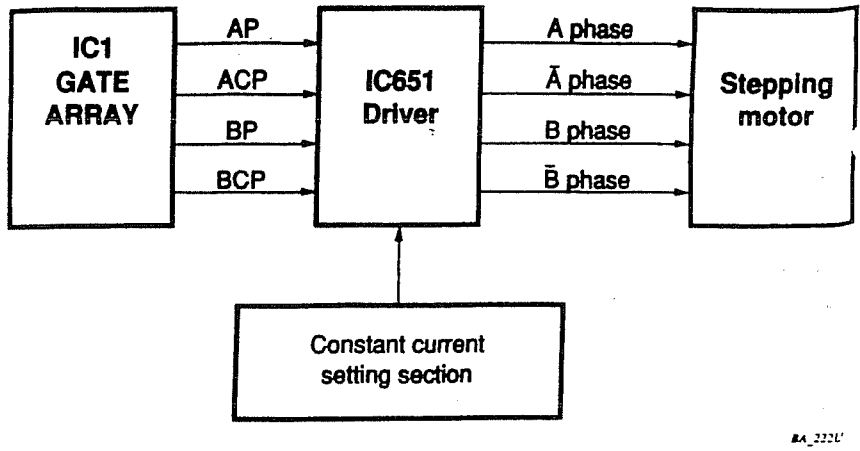


Figure 4-31-2

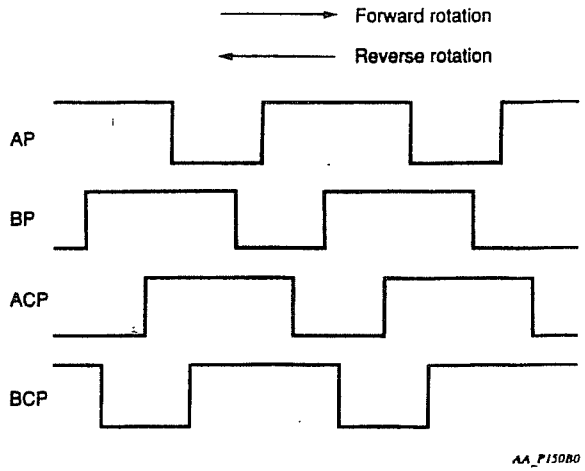


Figure 4-32-1

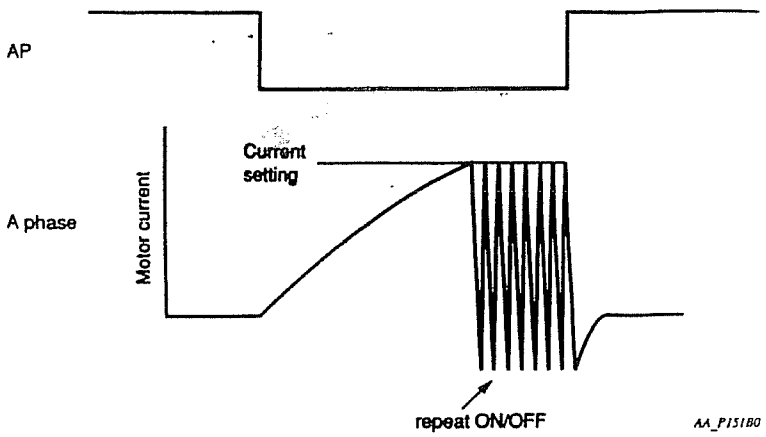


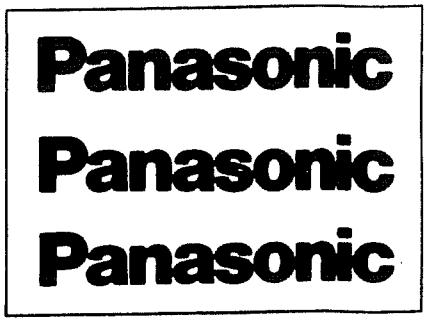
Figure 4-32-2

Section V
Troubleshooting

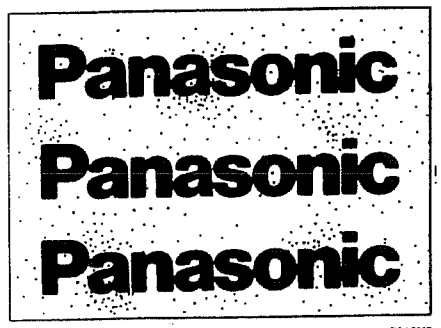
5.1 Problem flowchart

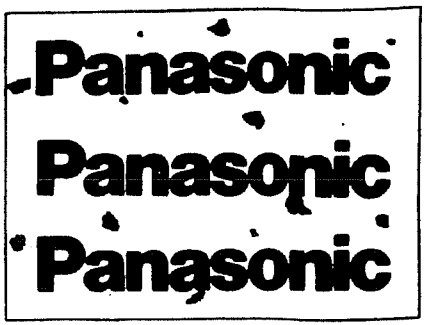
1. **Image information**
   - **Normal copy sample**
     Use this example as a good image reference.

Paper feed direction



PROBLEM: IRREGULAR DIRT





Is the platen glass dirty? Yes → Clean the platen glass.
↓ No

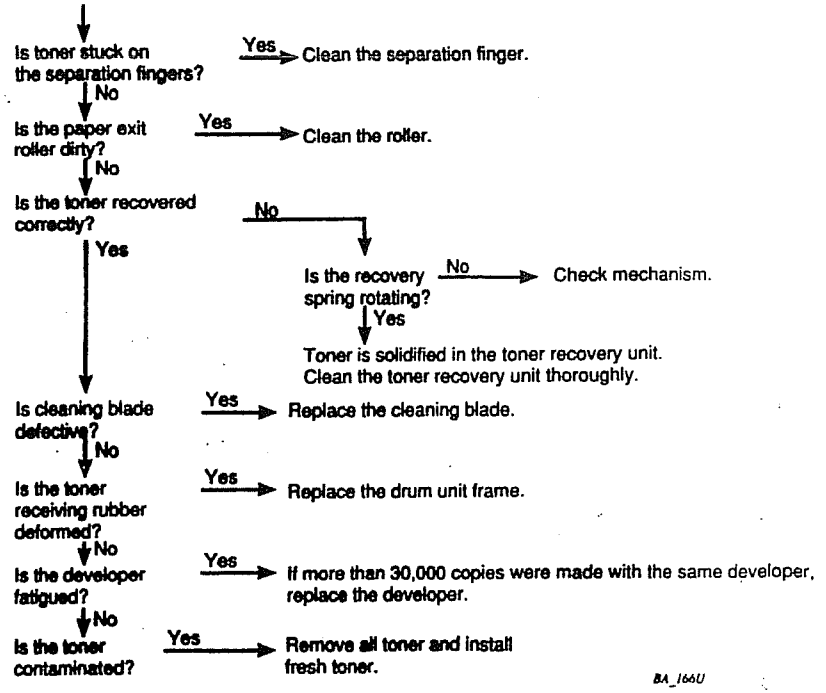
Is the paper feed roller or timing roller dirty? Yes → Clean the roller.
↓ No

Is the fuser guide plate dirty? Yes → Clean the fuser guide plate.
↓ No

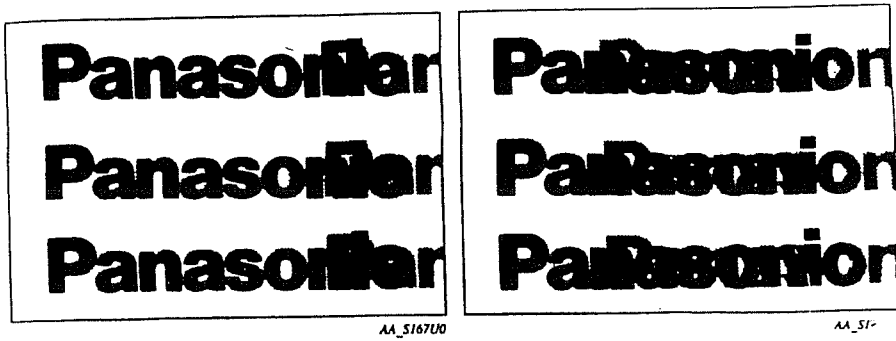
Is the heat or pressure roller dirty? Yes → Clean the heat or pressure roller. (Teflon roller only and rubber only if causing a problem, cleaning roller)
↓ No

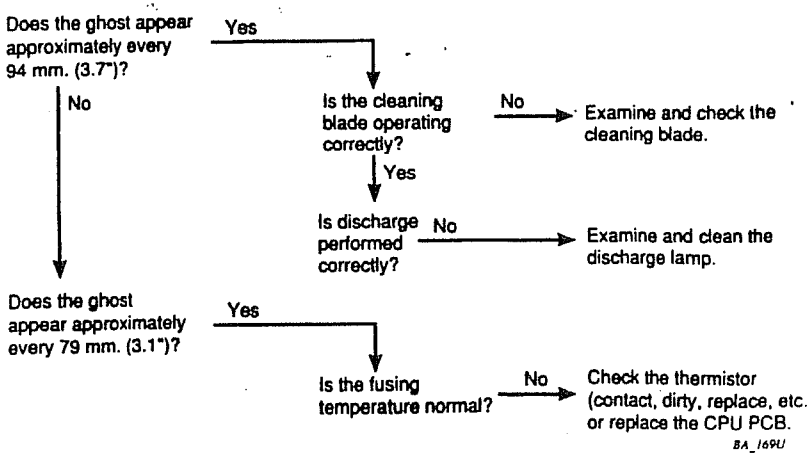
(Continued on next page.)

AA_I65U



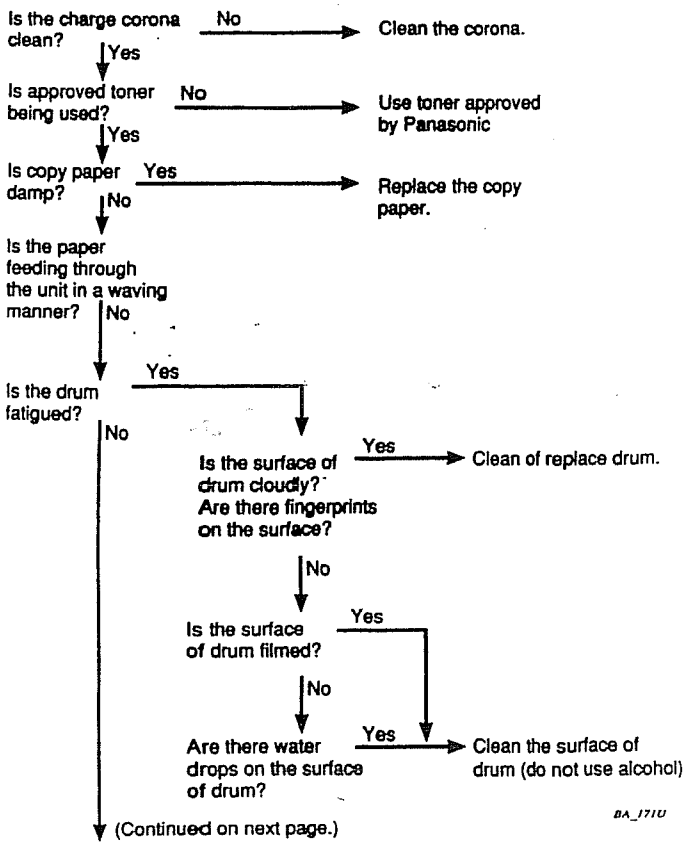
PROBLEM: GHOST-REPEATED IMAGE



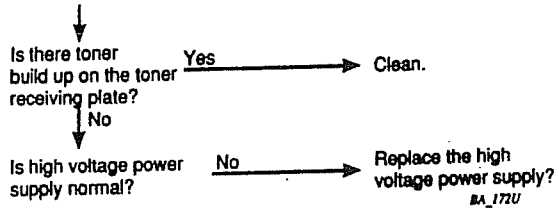

Does the ghost appear approximately every 94 mm. (3.7")?
Yes
Is the cleaning blade operating correctly?
No
Examine and check the cleaning blade.
Yes
Is discharge performed correctly?
No
Examine and clean the discharge lamp.
No
Does the ghost appear approximately every 79 mm. (3.1")?
Yes
Is the fusing temperature normal?
No
Check the thermistor (contact, dirty, replace, etc.), or replace the CPU PCB.
BA_169U

PROBLEM: VOID IN SOLID AREA AND TRAIL EDGE

AA_S170U0

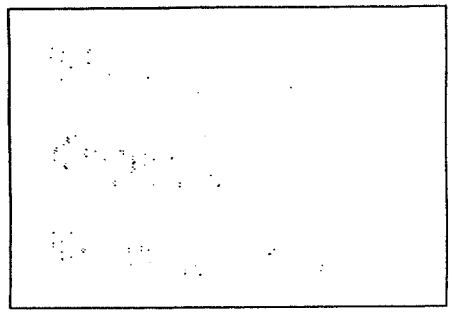


BA_171U

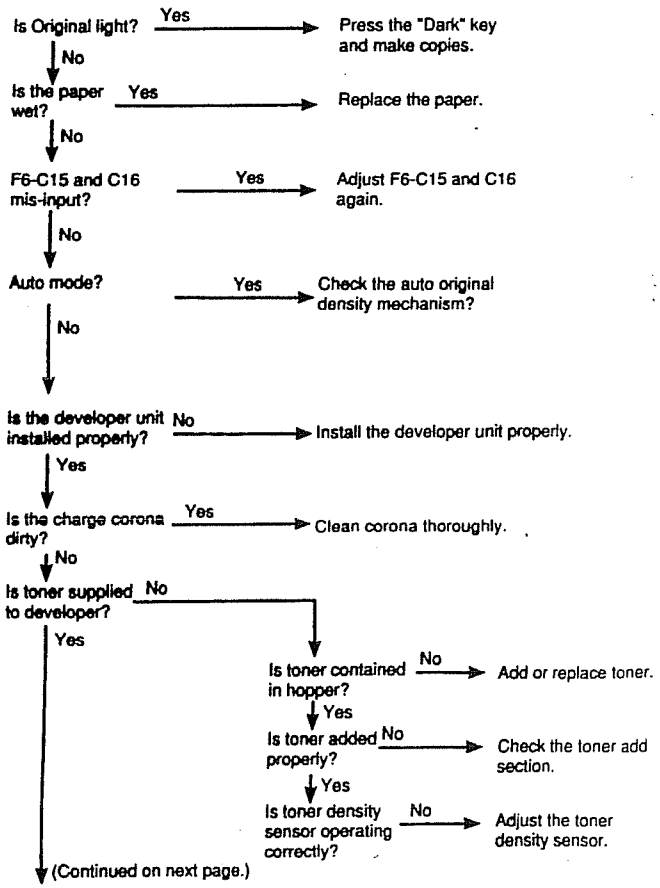


BA_172U

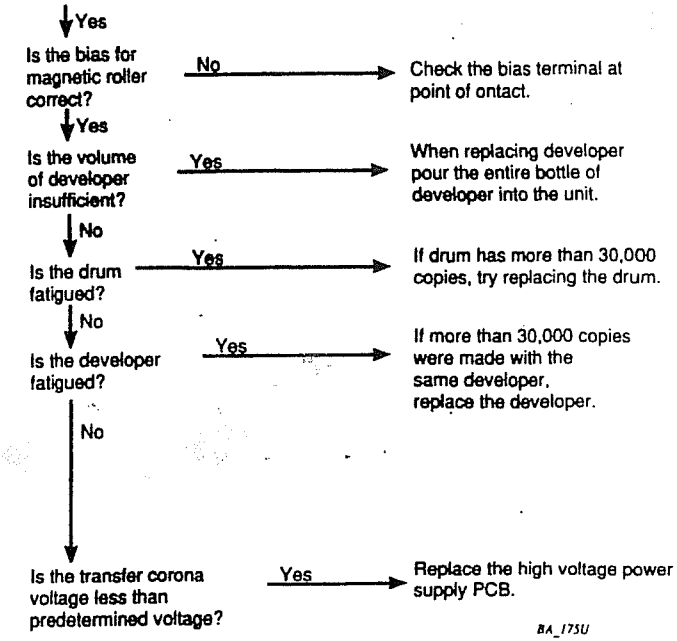
PROBLEM: LIGHT IMAGE



AA_5173U0

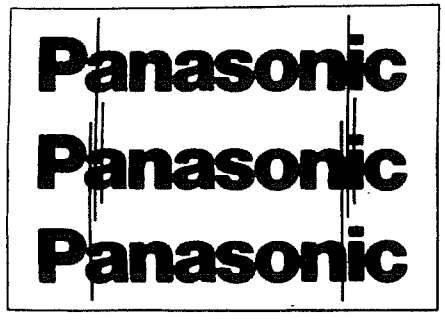


BA_174U

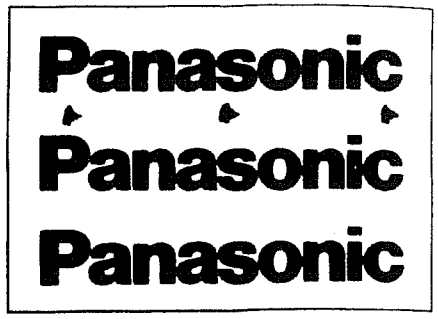

Yes
Is the bias for magnetic roller correct?
No
Check the bias terminal at point of ontact.
Yes
Is the volume of developer insufficient?
Yes
When replacing developer pour the entire bottle of developer into the unit.
No
Is the drum fatigued?
Yes
If drum has more than 30,000 copies, try replacing the drum.
No
Is the developer fatigued?
Yes
If more than 30,000 copies were made with the same developer, replace the developer.
No
Is the transfer corona voltage less than predetermined voltage?
Yes
Replace the high voltage power supply PCB.

BA_175U

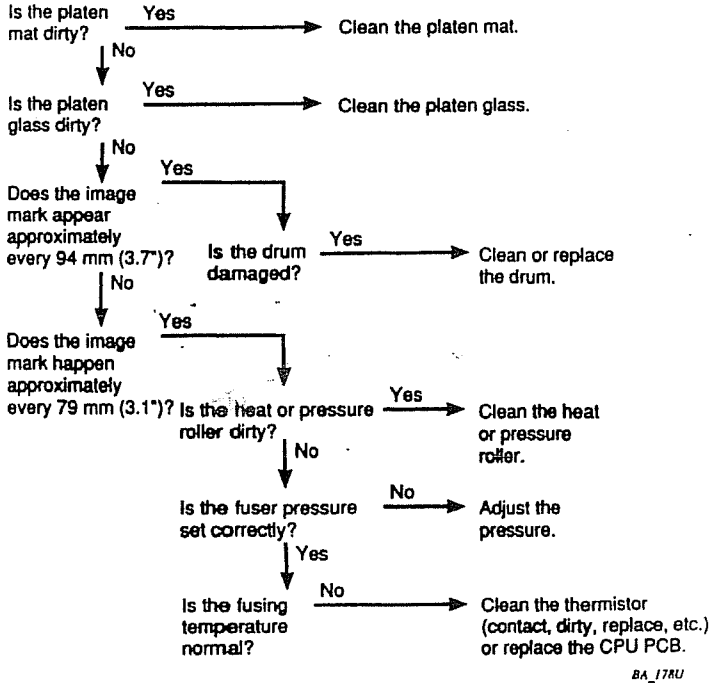
PROBLEM: MARKING ON COPY AT REGULAR INTERVALS



AA_5176U0

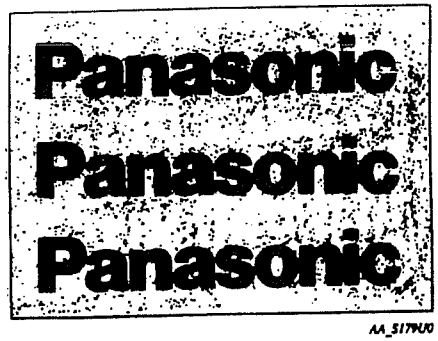


AA_5177U0

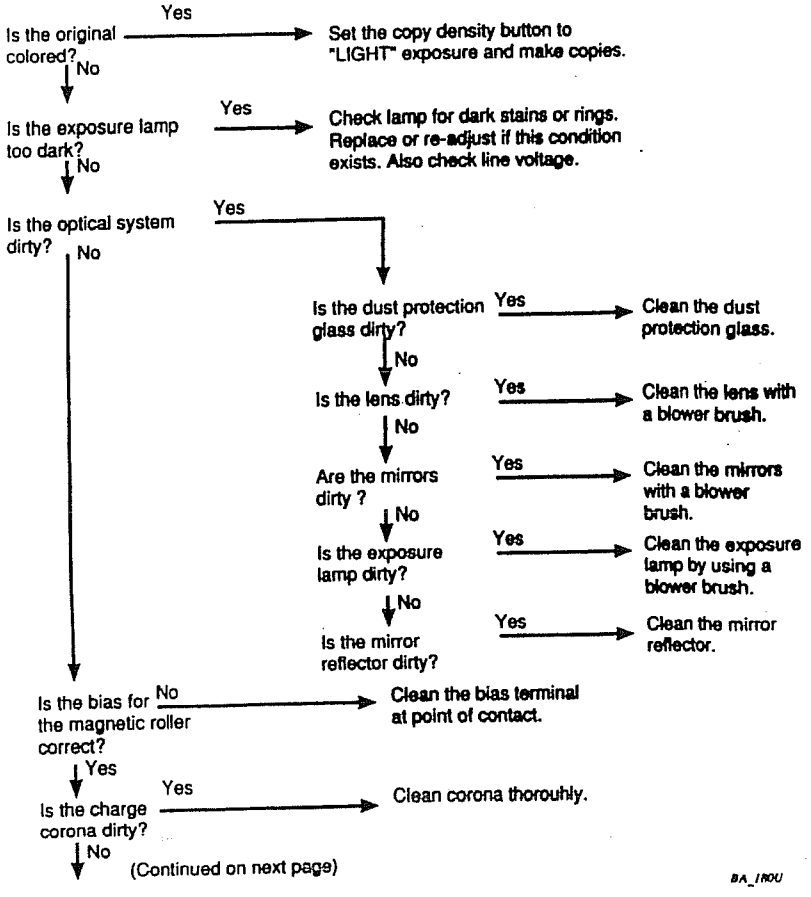


BA_178U

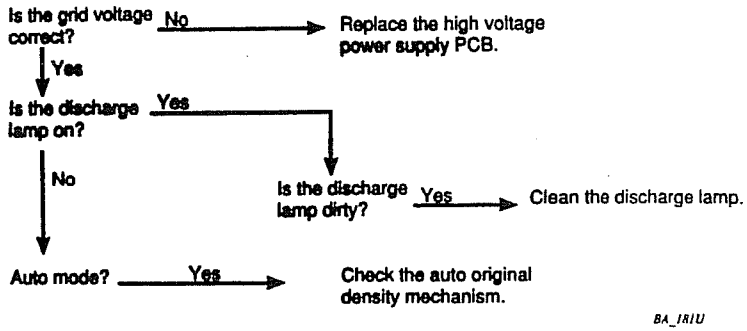
PROBLEM: BACKGROUND



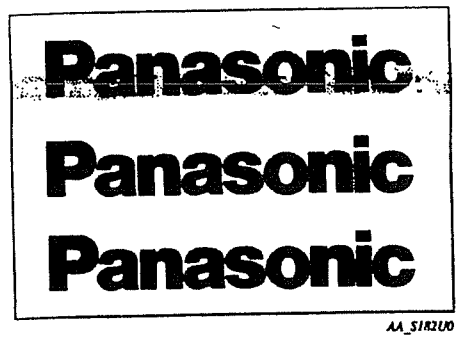
AA_5179U0

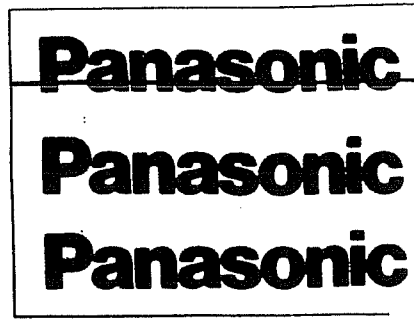


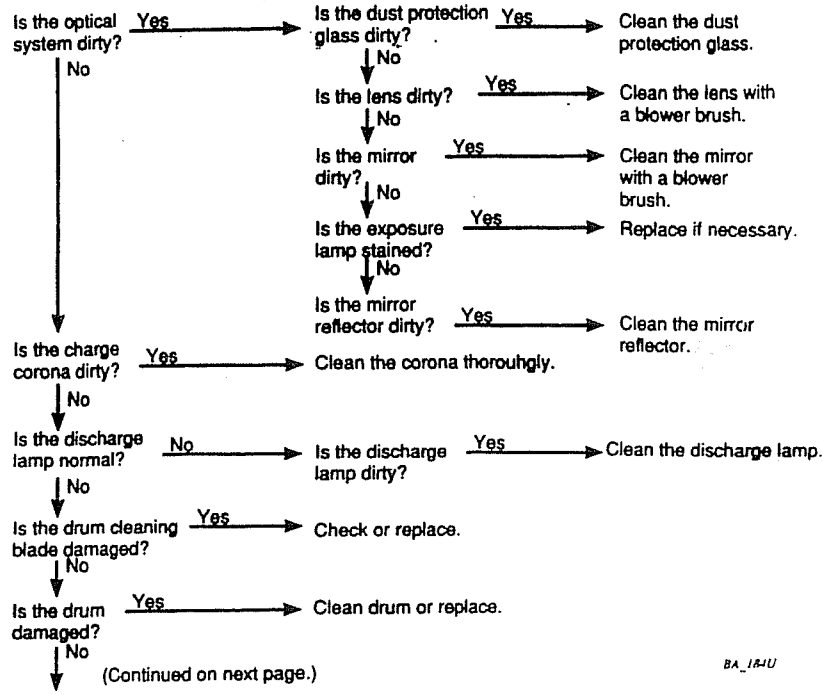
BA_180U

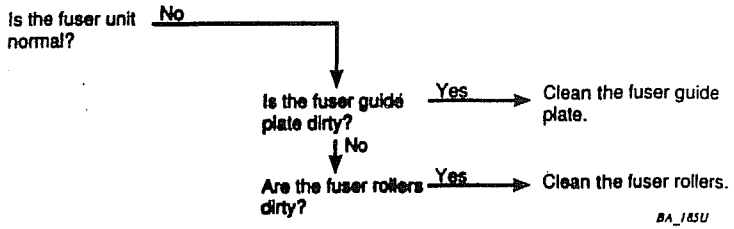


PROBLEM: DARK LINES IN DIRECTION OF PAPER FEED

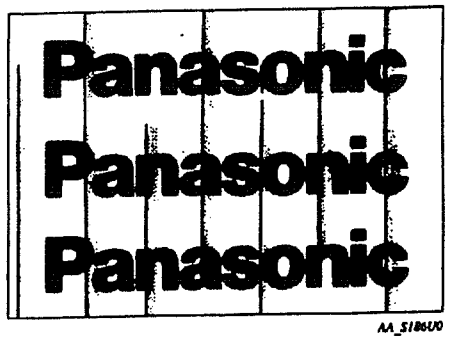


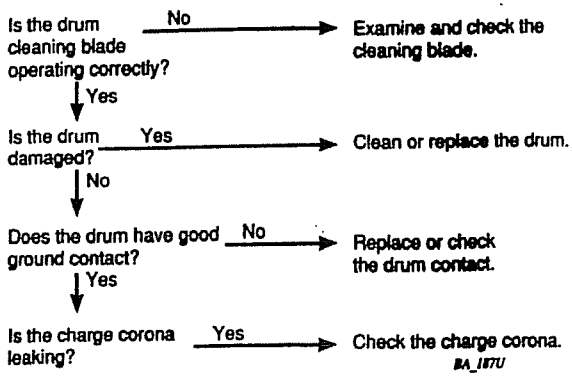




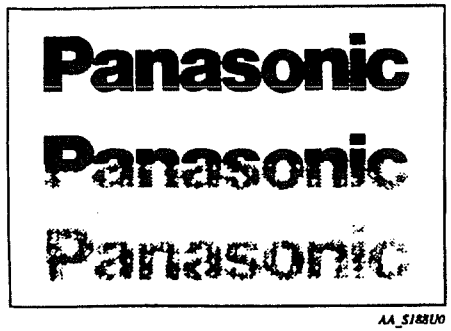


PROBLEM: DARK LINES IN OPPOSITE DIRECTION OF PAPER FEED

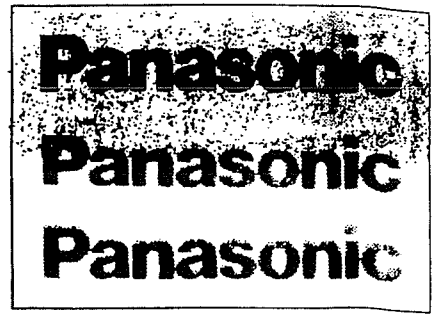




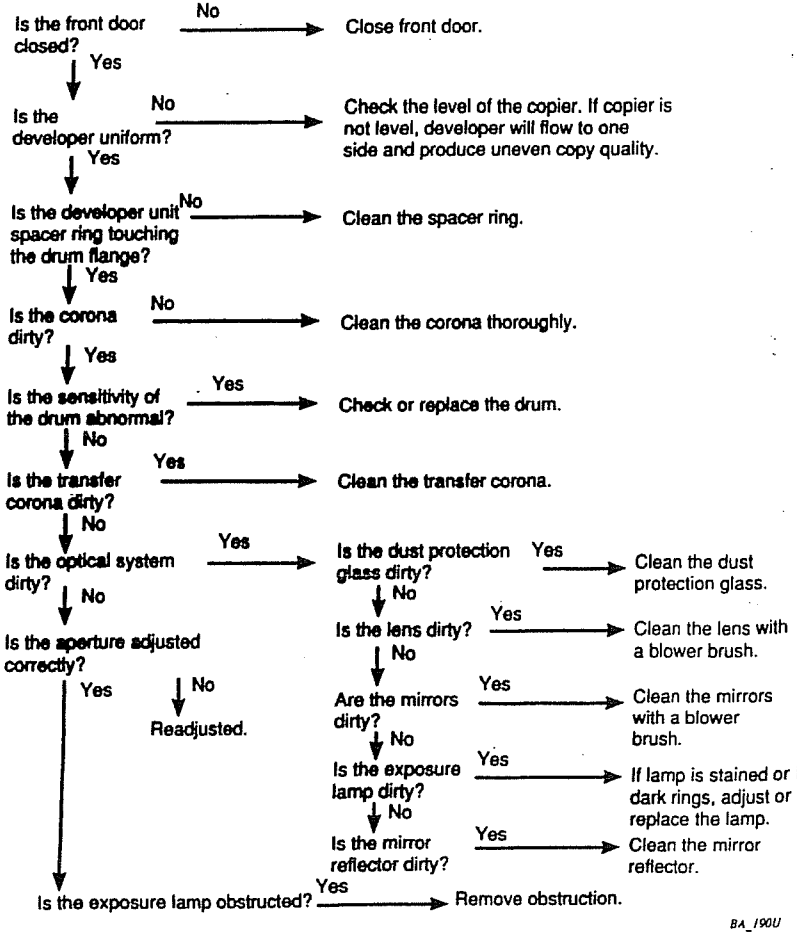
PROBLEM: VARIATION IN COPY DENSITY



AA_5188U0

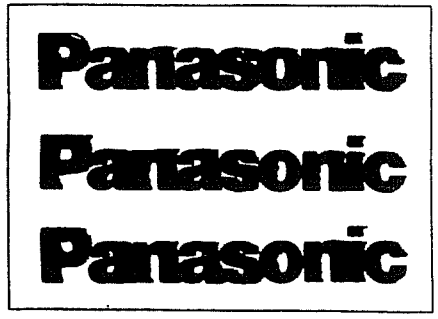


AA_5189U0

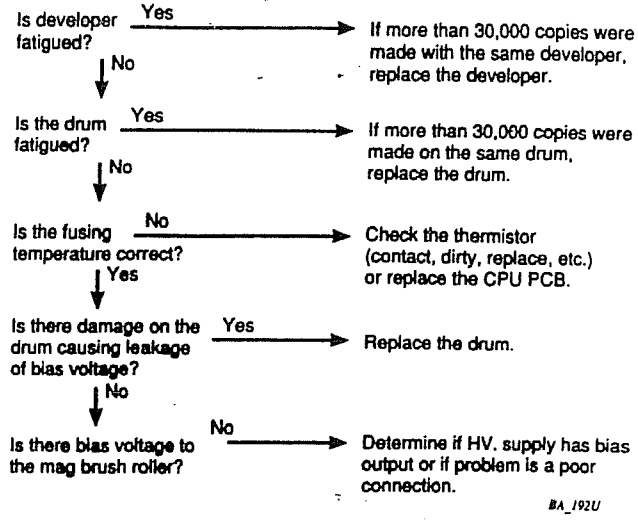


BA_190U

PROBLEM: TAILING OF IMAGE

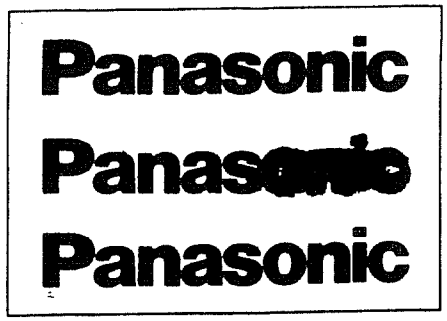


AA_5191U0

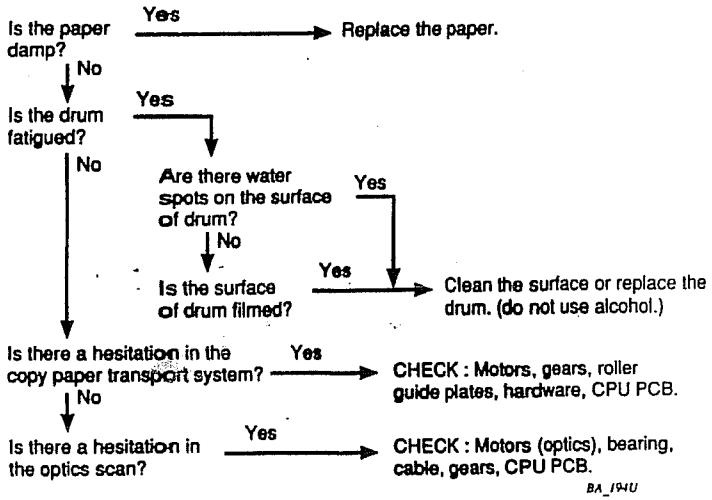

Is developer fatigued?
Yes
If more than 30,000 copies were made with the same developer, replace the developer.
No
Is the drum fatigued?
Yes
If more than 30,000 copies were made on the same drum, replace the drum.
No
Is the fusing temperature correct?
No
Check the thermistor (contact, dirty, replace, etc.) or replace the CPU PCB.
Yes
Is there damage on the drum causing leakage of bias voltage?
Yes
Replace the drum.
No
Is there bias voltage to the mag brush roller?
No
Determine if HV. supply has bias output or if problem is a poor connection.

BA_192U

PROBLEM: BLURRED IMAGE

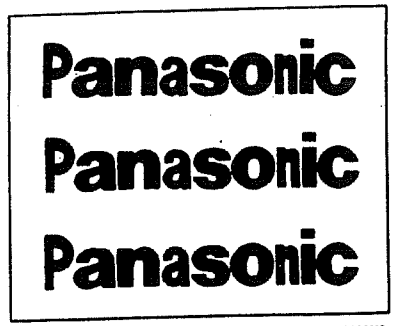


AA_5193U0

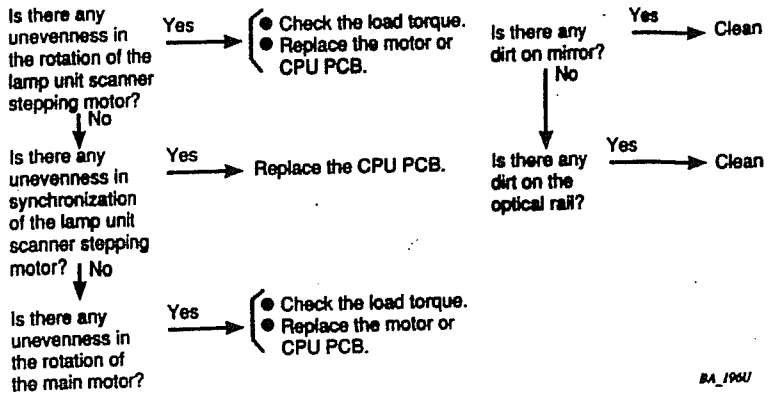

Is the paper damp?
Yes
Replace the paper.
No
Is the drum fatigued?
Yes
Are there water spots on the surface of drum?
Yes
No
Is the surface of drum filmed?
Yes
Clean the surface or replace the drum. (do not use alcohol.)
No
Is there a hesitation in the copy paper transport system?
Yes
CHECK : Motors, gears, roller guide plates, hardware, CPU PCB.
No
Is there a hesitation in the optics scan?
Yes
CHECK : Motors (optics), bearing, cable, gears, CPU PCB.

BA_194U

PROBLEM: ENLARGEMENT OR SHRINKAGE OF IMAGE (INCLUDING A DISTORTED IMAGE)

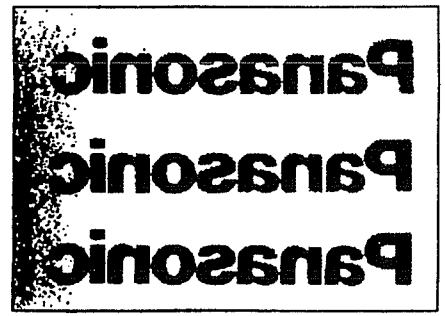


AA_5195U0

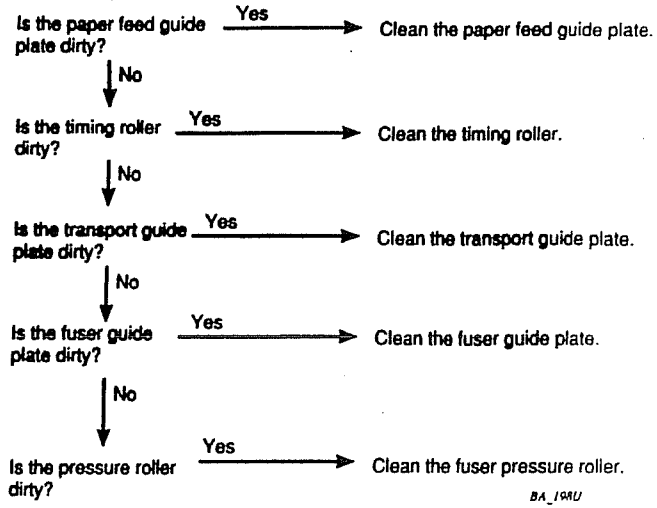

Is there any unevenness in the rotation of the lamp unit scanner stepping motor?
Yes
● Check the load torque.
● Replace the motor or CPU PCB.
Is there any dirt on mirror?
Yes
Clean
No
Is there any unevenness in synchronization of the lamp unit scanner stepping motor?
Yes
Replace the CPU PCB.
Is there any dirt on the optical rail?
Yes
Clean
No
Is there any unevenness in the rotation of the main motor?
Yes
● Check the load torque.
● Replace the motor or CPU PCB.

BA_196U

PROBLEM: MARKING ON BACK OF COPY

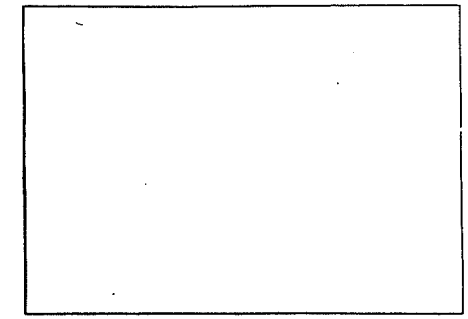


AA_S197U0



BA_I98U

PROBLEM: WHITE COPY, NO IMAGE



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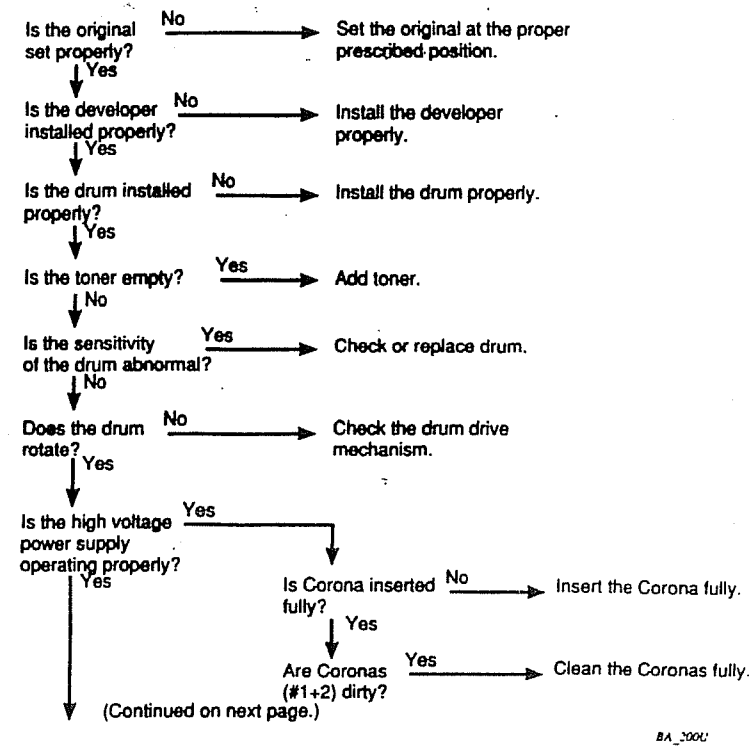
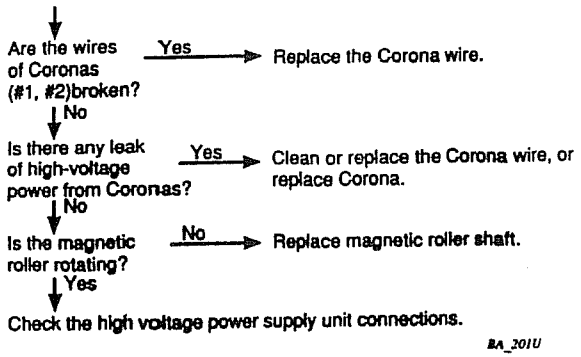


BA_200U



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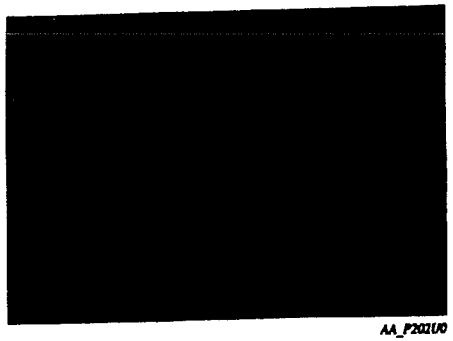
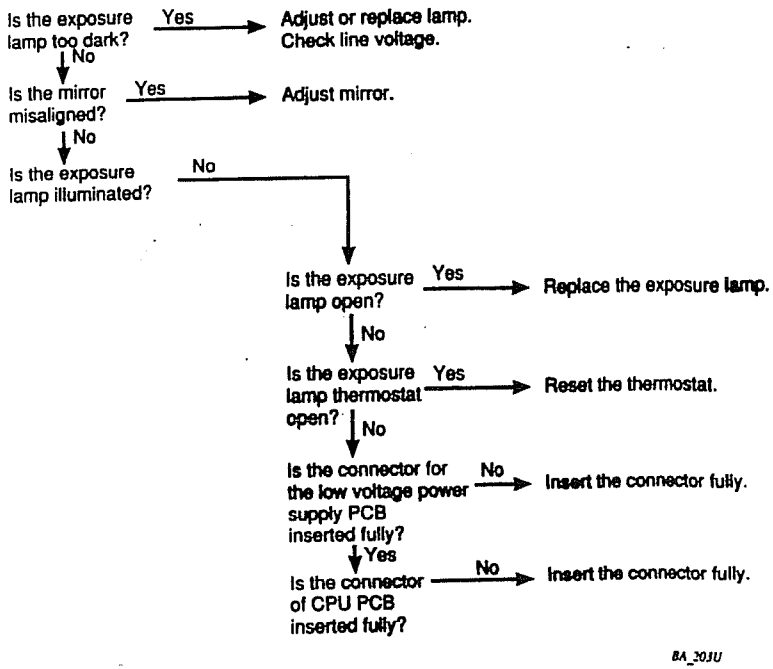
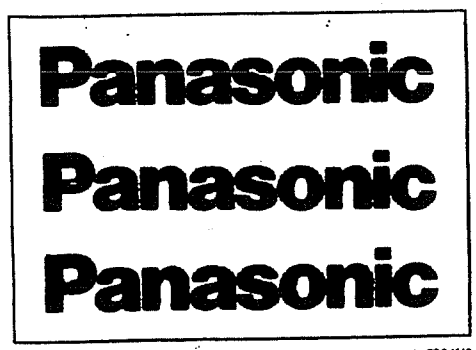
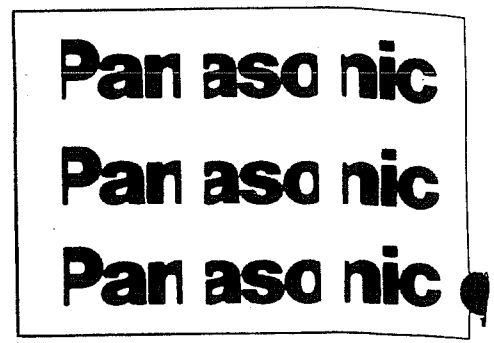




PROBLEM: WHITE LINES IN SOLID AREA



AA_5204U0



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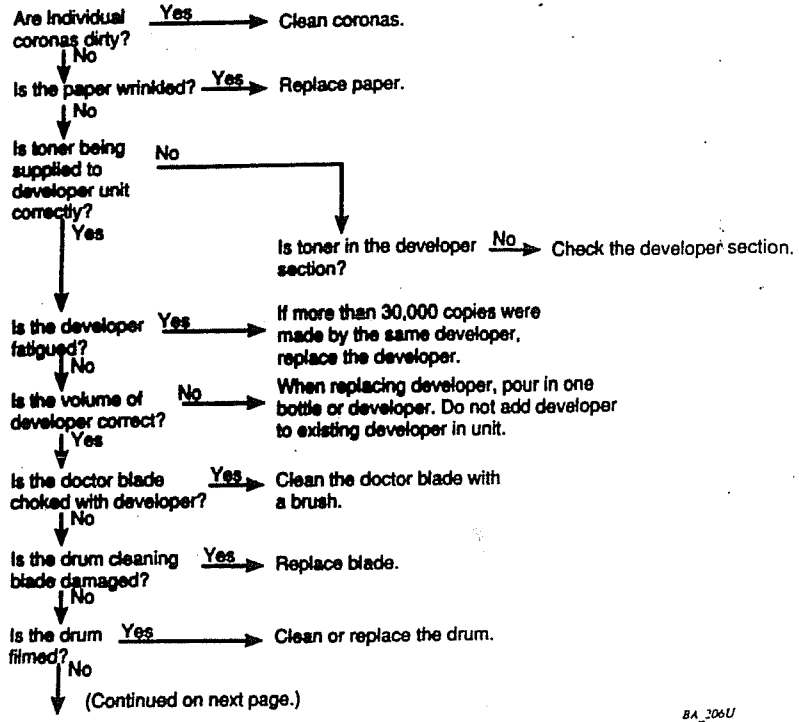
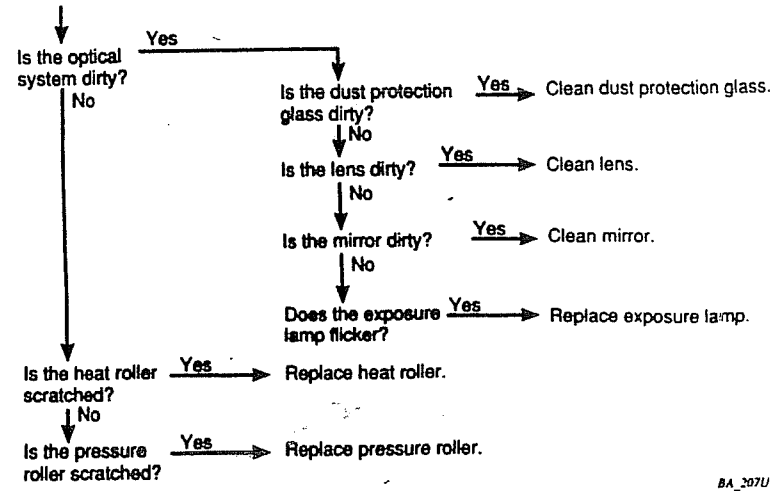
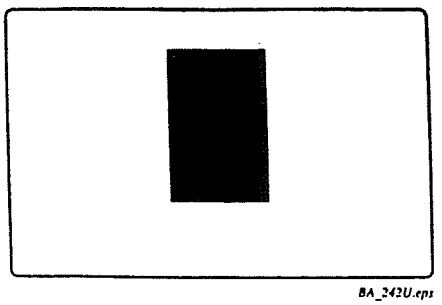


BA_206U

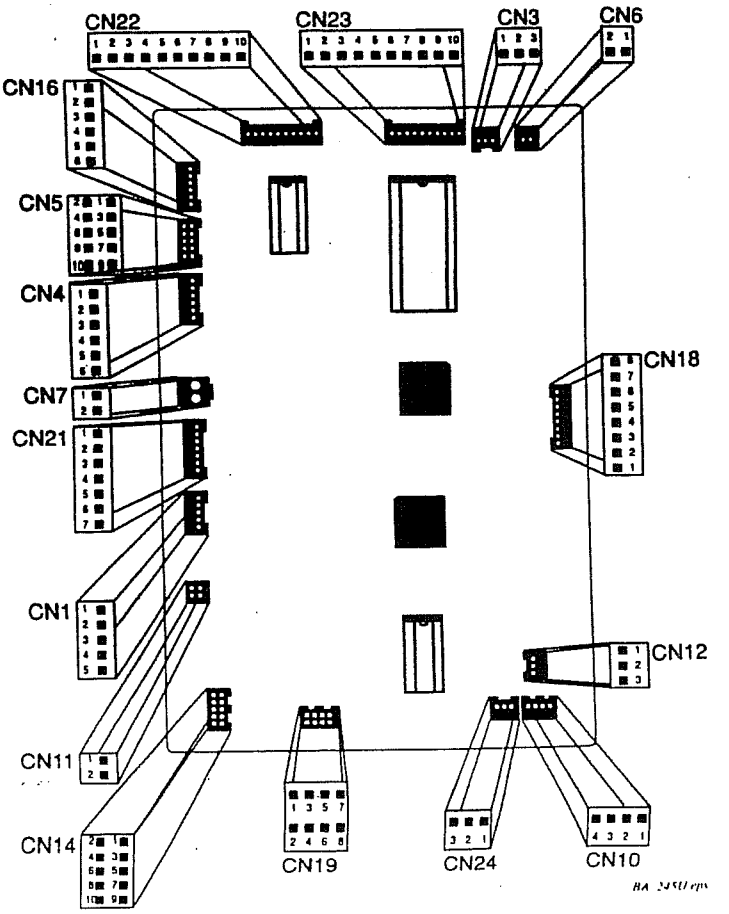


BA_207U

5.4 Troubleshooting guide CPU PCB



Rear view



(CN1)

Pin No.	Signal Name	Destination	Status	Function
1	VO	Low voltage power supply PCB CN405-5	10V / 0V	+ 10VDC power supply
2	AGND	Low voltage power supply PCB CN405-4	0V	Ground
3	VL	Low voltage power supply PCB CN405-3	5V / 0V AA_P214BO	+ 5VDC power supply
4	SGND	Low voltage power supply PCB CN405-2	0V	Signal ground
5	VCNT	Low voltage power supply PCB CN405-1	0.7V OFF ON 0.2V BA_227U	+ 24VDC ON/OFF signal

(CN3)

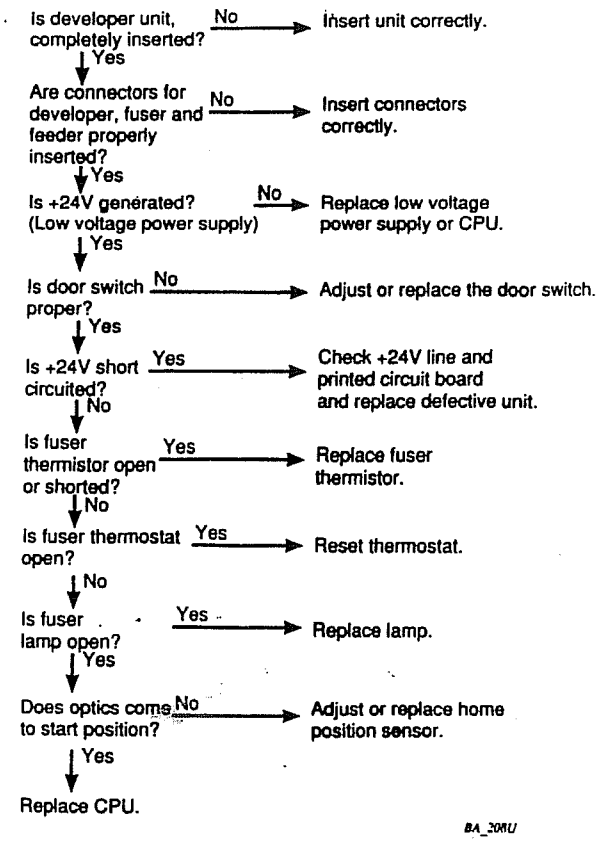
Pin No.	Signal Name	Destination	Status	Function
1	SGND	Blacking prevention film home position sensor CNSHPC-3, CNSHP-3	0V	Signal ground
2	SHPSN	Blacking prevention film home position sensor CNSHPC-2, CNSHP-2	5V ON 0V BA_228U	Shutter home position sensor ON/OFF signal
3	VL	Blacking prevention film home position sensor CNSHPC-1, CNSHP-1	5V AA	+ 5VDC power supply

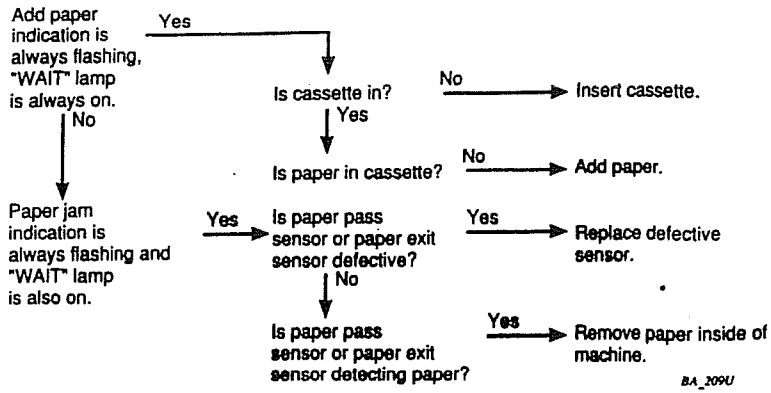
(CN4)

Pin No.	Signal Name	Destination	Status	Function
1	ACPB	Toner supply/ Blacking prevention filmmotor CNBT-6	Pulse 60V peak AA_P23RBO	Toner supply/Shutter motor drive signal $\overline{A}$
2	VP	Toner supply/Blacking prevention film motor CNBT-5	24V 0V AA_P231BO	+24VDC power supply
3	APB	Toner supply/Blacking prevention film motor CNBT-4	Pulse 60V peak AA_P23RBO	Toner supply/Shutter motor drive signal A
4	BPB	Toner supply/Blacking prevention film motor CNBT-3		Toner supply/Shutter motor drive signal B
5	VP	Toner supply/Blacking prevention film motor CNBT-2	24V 0V AA_P231BO	+24VDC power supply
6	BCPB	Toner supply/Blacking prevention film motor CNBT-1	Pulse 60V peak AA_P23RBO	Toner supply/Shutter motor drive signal $\overline{B}$

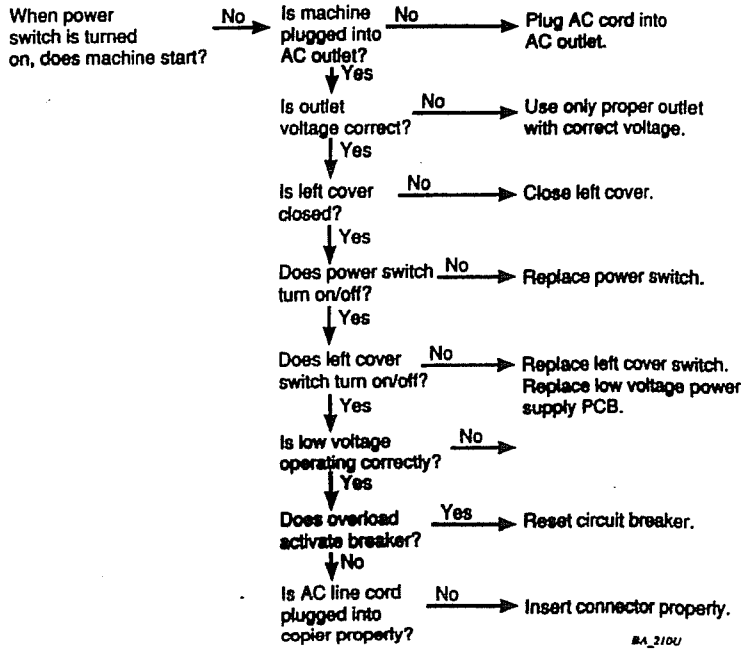
2. Other information

PROBLEM: "WAIT" LAMP ON NO COPY FUNCTION

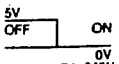
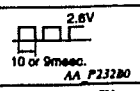
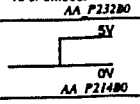
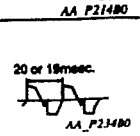




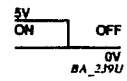
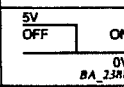
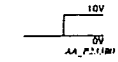
PROBLEM: MACHINE DOES NOT TURN ON



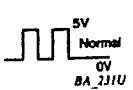
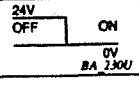
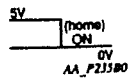
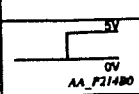
(CN21)

Pin No.	Signal Name	Destination	Status	Function
1	HTTR	Low voltage power supply PCB CN407-7		Fuser lamp ON/OFF signal
2	LPTR	Low voltage power supply PCB CN407-6		Exposure lamp ON/OFF signal
3	SGND	Low voltage power supply PCB CN407-5	0V	Signal ground
4	ZCRS	Low voltage power supply PCB CN407-4		Zero cross signal
5	VL	Low voltage power supply PCB CN407-3		+5VDC power supply
6	LFB2	Low voltage power supply PCB CN407-2		Voltage feed back 2 for exposure lamp
	LFB1	Low voltage power supply PCB CN407-1		Voltage feed back 1 for exposure lamp

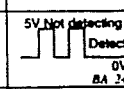
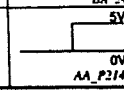
(CN22)

Pin No.	Signal Name	Destination	Status	Function
1	P50	Optics driver PCB CN651-1		Lamp unit scanner motor drive signal A
2	P52	Optics driver PCB CN651-2		Lamp unit scanner motor drive signal B
3	P51	Optics driver PCB CN651-3		Lamp unit scanner motor drive signal A
4	P53	Optics driver PCB CN651-4		Lamp unit scanner motor drive signal B
5	LMPD	Optics driver PCB CN651-5	0V: Normal	Lamp unit scanner motor power down control signal
6	SNSL	Optics driver PCB CN651-6		Full-speed unit solenoid control signal
7	H56SL	Optics driver PCB CN651-7		Half-speed unit solenoid control signal
8	AESL	Optics driver PCB CN651-8		Auto original density solenoid ON/OFF signal
9	AESN	Optics driver PCB CN651-9	Analogue level 0 - 4V	Auto original density sensor output signal
10	VO	Optics driver PCB CN651-10		+10VDC power supply

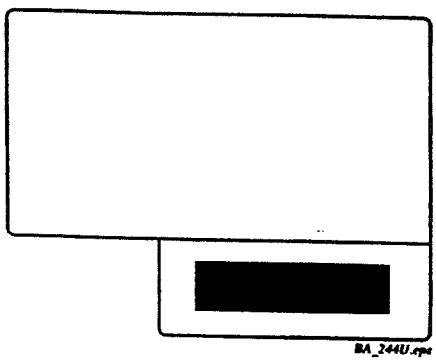
(CN23)

Pin No.	Signal Name	Destination	Status	Function
1	AGND	Optics driver PCB CN652-1	0V	Ground
2	LPFLCK 1	Optics driver PCB CN652-2		Lamp unit scanner motor lock 1 signal
3	LPFLCK 2	Optics driver PCB CN652-3		Lamp unit scanner motor lock 2 signal
4	LPFCNT	Optics driver PCB CN652-4		Optics cooling fan motor ON/OFF signal
5	56HPSN	Optics driver PCB CN652-5		No.5/6 mirror unit home position sensor ON/OFF signal
6	HPSN	Optics driver PCB CN652-6		Full-speed unit home position sensor ON/OFF signal
7	HSHPSNS	Optics driver PCB CN652-7		Half-speed unit home position sensor ON/OFF signal
8	VL	Optics driver PCB CN652-8		+5VDC power supply
9	SGND	Optics driver PCB CN652-9	0V	Signal ground
10	SGND	Optics driver PCB CN652-10	0V	Signal ground

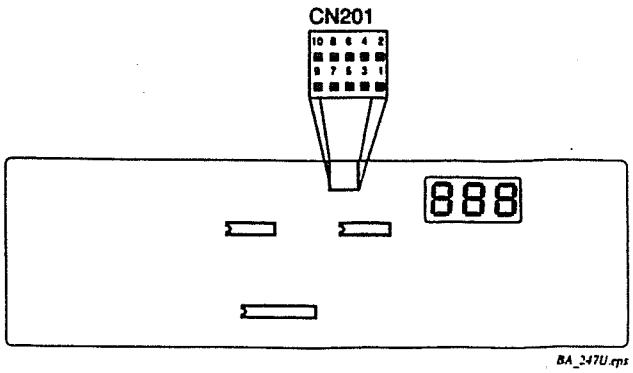
(CN24)

Pin No.	Signal Name	Destination	Status	Function
1	SGND	Sheet bypass paper pass sensor CNHFPP-1	0V	Signal ground
2	HFPPSN	Sheet bypass paper pass sensor CNHFPP-2		Sheet bypass paper pass sensor signal
3	VL	Sheet bypass paper pass sensor CNHFPP-3		+5VDC power supply

Control panel PCB



Top view



(CN201)

Pin No.	Signal Name	Destination	Status	Function
1	CPDATA	CPU PCB CN5-1		Control panel transmission data signal
2	CPKEY	CPU PCB CN5-2	5V 0V AA_P21688	Control panel key data signal
3	LCLK	CPU PCB CN5-3		Control panel LED data transmission clock signal
4	CPLD	CPU PCB CN5-4	5V 0V BA_229U	Control panel transmission data load signal
5	CPLATCH	CPU PCB CN5-5	Pulse 5V 0V AA_P22488	Control panel transmission data latch signal
6	TED	CPU PCB CN5-6	—	—
7	TEDP	CPU PCB CN5-7	—	—
8	KCLK	CPU PCB CN5-8	5V 0V AA_P21680	Control panel key data transmission clock signal
9	SGND	CPU PCB CN5-9	0V	Signal ground
10	VL	CPU PCB CN5-10	5V	+5VDC power supply

(CN5)

Pin No.	Signal Name	Destination	Status	Function
1	CPDATA	Control panel PCB CN201-1	5V 0V AA_P21680	Control panel transmission data signal
2	CPKEY	Control panel PCB CN201-2		Control panel key data signal
3	LCLK	Control panel PCB CN201-3		Control panel LED data transmission clock signal
4	CPLD	Control panel PCB CN201-4	5V 0V BA_229U	Control panel transmission data load signal
5	CPLATCH	Control panel PCB CN201-5	Pulse 5V 0V AA_P22480	Control panel transmission data latch signal
6	TED	Control panel PCB CN201-6	—	—
	TEDP	Control panel PCB CN201-7	—	—
8	KCLK	Control panel PCB CN201-8	5V 0V AA_P21680	Control panel key data transmission clock signal
9	SGND	Control panel PCB CN201-9	0V	Signal ground
10	VL	Control panel PCB CN201-10	5V 0V AA_P21480	+5VDC power supply

(CN6)

Pin No.	Signal Name	Destination	Status	Function
1	VP	Discharge lamp	24V 0V AA_P23180	+24VDC power supply
2	ELP		24V ON OFF 0V AA_P23180	Discharge lamp ON/OFF signal

(CN7)

Pin No.	Signal Name	Destination	Status	Function
1	VP	Low voltage power supply PCB CN406-3	24V 0V AA_P23180	+24VDC power supply
2	PGND	Low voltage power supply PCB CN406-1	0V	Power ground

(CN10)

Pin No.	Signal Name	Destination	Status	Function
1	SGND	Paper exit sensor CNPFOC-1, CNPFO-3	0V	Signal ground
2	PFOSN	Paper exit sensor CNPFOC-2, CNPFO-2	Not detecting 5V 0V Detecting 20msec. AA_P22980	Paper exit sensor ON/OFF signal
3	VL	Paper exit sensor CNPFOC-3, CNPFO-1	5V 0V AA_P21480	+5VDC power supply
4	—	—	—	—

(CN11)

Pin No.	Signal Name	Destination	Status	Function
1	VP	Total counter CNCT-1	24V 0V AA_P23180	+24VDC power supply
2	CT	Total counter CNCT-2	24V OFF ON 0V BA_230U	Total counter ON/OFF signal

(CN12)

Pin No.	Signal Name	Destination	Status	Function
1	SGND	Timing roller sensor CNRR-3	0V	Ground
2	RRSN	Timing roller sensor CNRR-2	Not detecting 5V 0V Detecting 20msec. AA_P22980	Timing roller sensor ON/OFF signal
3	VL	Timing roller sensor CNRR-1	5V 0V AA_P21480	+5VDC power supply

(CN14)

Pin No.	Signal Name	Destination	Status	Function
1	MMLCK	Main motor CNMM-5	5V Normal 0V BA_231U	Main motor lock signal
2	PGND	Main motor CNMM-4	0V	Power ground
3	MMCNT	Main motor CNMM-3	5V AUS EIN 0V BA_232G	Main motor ON/OFF drive signal
4	PGND	Main motor CNMM-2	0V	Power ground
5	VP	Main motor CNMM-1	24V 0V AA_P231B0	+24VDC power supply
6	PGND	Fuser cooling fan motor CNEX-3	0V	Power ground
7	EXFLCK	Fuser cooling fan motor CNEX-2	5V Normal 0V BA_231U	Fuser cooling fan motor lock signal
8	EXFCNT	Fuser cooling fan motor CNEX-1	24V ON OFF 0V AA_P21B0	Fuser cooling fan motor ON/OFF drive signal
9	PFCR	Paper feed roller clutch CNPF-1	24V ON OFF 0V AA_P21B0	Paper feed roller clutch ON/OFF drive signal
10	VP	Paper feed roller clutch CNPF-2	24V 0V AA_P231B0	+24VDC power supply

(CN16)

Pin No.	Signal Name	Destination	Status	Function
1	SGND	Toner density sensor CNTD-1, CNTDC-1	0V	Signal ground
2	TDC	Toner density sensor CNTD-2, CNTDC-2	Analogue level 0.5 - 5.0V	Toner density sensor signal
3	VP	Toner density sensor CNTD-3, CNTDC-3	24V 0V AA_P231B0	+24VDC power supply
4	TDCNT	Toner density sensor CNTD-4, CNTDC-4	Analogue level	Toner density sensor gain control signal
5	DVE	Developer unit connector CNTD-5, 6	5V Installation 0V BA_233U	Developer unit detecting signal
6	SGND		0V	Signal ground

(CN18)

Pin No.	Signal Name	Destination	Status	Function
1	VP	High voltage power supply PCB CN701-1	24V 0V AA_P231B0	+24VDC power supply
2	PGND	High voltage power supply PCB CN701-2	0V	Power ground
3	HVCNT	High voltage power supply PCB CN701-3	12V ON OFF 5V BA_234U	High voltage power supply ON/OFF control signal (for Charge/Transfer corona)
4	HVLKC	High voltage power supply PCB CN701-4	Leak 0V BA_235U	Self-diagnostic input signal for high voltage leak +5V:Normal 0V:Leak
5	GRCNT	High voltage power supply PCB CN701-5	10V OFF 0V BA_236U	Grid voltage ON/OFF signal
6	GCNT	High voltage power supply PCB CN701-6	Analogue level 0.5 - 8.5V	Grid voltage control signal
7	HVBCNT	High voltage power supply PCB CN701-7	16V OFF ON 0V BA_237U	High voltage power supply ON/OFF control signal (for Developer bias/Separation corona)
8	BCNT	High voltage power supply PCB CN701-8	Analogue level 0 - 8.5V	Bias voltage control signal

(CN19)

Pin No.	Signal Name	Destination	Status	Function
1	TH1	Fuser thermistor CNTH-1	Analogue level	Fuser thermistor terminal 1
2	TH2	Fuser thermistor CNTH-2	Analogue level	Fuser thermistor terminal 2
3	HFSOL	—	—	—
4	VP	—	—	—
5	HFCR	Sheet bypass clutch CNHF-1	24V OFF ON 0V BA_230U	Sheet bypass clutch ON/OFF signal
6	VP	Sheet bypass clutch CNHF-2	24V 0V AA_P231B0	+24VDC power supply
7	RRCR	Paper feed roller clutch CNRR-1	24V OFF ON 0V BA_230U	Timing roller clutch ON/OFF signal
8	VP	Paper feed roller clutch CNRR-2	24V 0V AA_P231B0	+24VDC power supply

w voltage power supply PCB

CN402)

Pin No.	Signal Name	Destination	Status	Function
1	AC1	Lamp unit CNLP-1	120/220-240 VAC	120/220-240 VAC power supply (Live)
2	EXLP	Lamp unit CNLP-2	87/134 VACrms (lighting) 20 or 18msec. BA_241U	Exposure lamp lighting

(CN405)

Pin No.	Signal Name	Destination	Status	Function
1	VCNT	CPU PCB CN1-5	5V OFF ON 0V AA_P213B0	+24VDC ON/OFF signal
2	SGND	CPU PCB CN1-4	0V	Signal ground
3	VL	CPU PCB CN1-3	5V 0V AA_P214B0	+5VDC power supply
4	AGND	CPU PCB CN1-2	0V	Ground
5	VO	CPU PCB CN1-1	10V 0V	+10VDC power supply

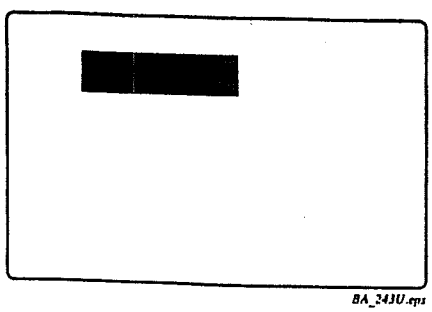
(CN406)

Pin No.	Signal Name	Destination	Status	Function
1	PGND	CPU PCB CN7-2	0V	Power ground
2	PGND	Optics driver PCB CN653-2	0V	Power ground
3	VP	CPU PCB CN7-1	24V 0V AA_P231B0	+24VDC power supply
4	VP	Optics driver PCB CN653-1	24V 0V AA_P231B0	+24VDC power supply

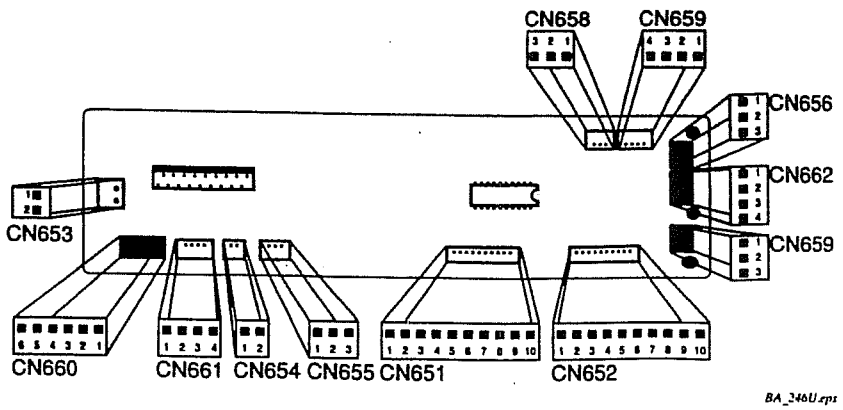
CN407)

Pin No.	Signal Name	Destination	Status	Function
1	LFB1	CPU PCB CN21-7	20 or 19msec. AA_P234B0	Voltage feed back 1 for exposure lamp
	LFB2	CPU PCB CN21-6		Voltage feed back 2 for exposure lamp
3	VL	CPU PCB CN21-5	5V 0V AA_P214B0	+5VDC power supply
4	ZCRS	CPU PCB CN21-4	2.6V 10 or 9msec. AA_P232B0	Zero cross signal
5	SGND	CPU PCB CN21-3	0V	Ground
6	LPTR	CPU PCB CN21-2	5V OFF ON 0V BA_23HU	Exposure lamp ON/OFF signal
7	HTTR	CPU PCB CN21-1		Fuser lamp ON/OFF signal

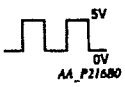
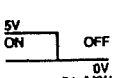
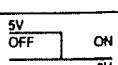
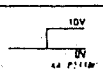
Optics driver PCB



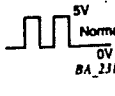
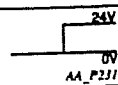
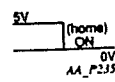
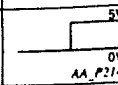
Rear view



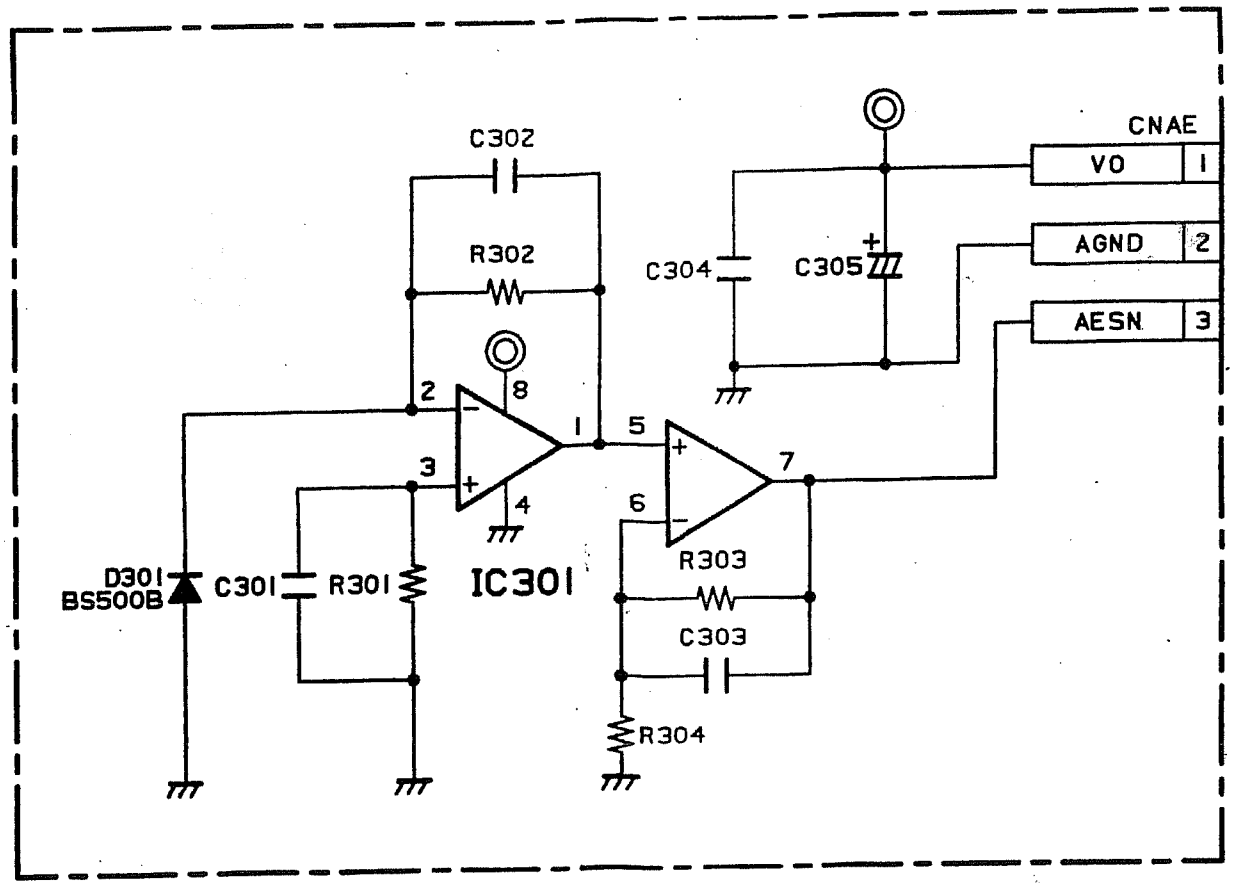
(CN651)

Pin No.	Signal Name	Destination	Status	Function
1	P50	CPU PCB CN22-1		Lamp unit scanner motor drive signal A
2	P52	CPU PCB CN22-2		Lamp unit scanner motor drive signal B
3	P51	CPU PCB CN22-3		Lamp unit scanner motor drive signal A
4	P53	CPU PCB CN22-4		Lamp unit scanner motor drive signal B
5	LMPD	CPU PCB CN22-5	0V: Normal	Lamp unit scanner motor power down control signal
6	SNSL	CPU PCB CN22-6		Full-speed unit solenoid control signal
7	H56SL	CPU PCB CN22-7		Half-speed unit solenoid control signal
8	AESL	CPU PCB CN22-8		Auto original density solenoid ON/OFF signal
9	AESN	CPU PCB CN22-9	Analogue level 0 - 4V	Auto original density sensor output signal
10	VO	CPU PCB CN22-10		+10VDC power supply

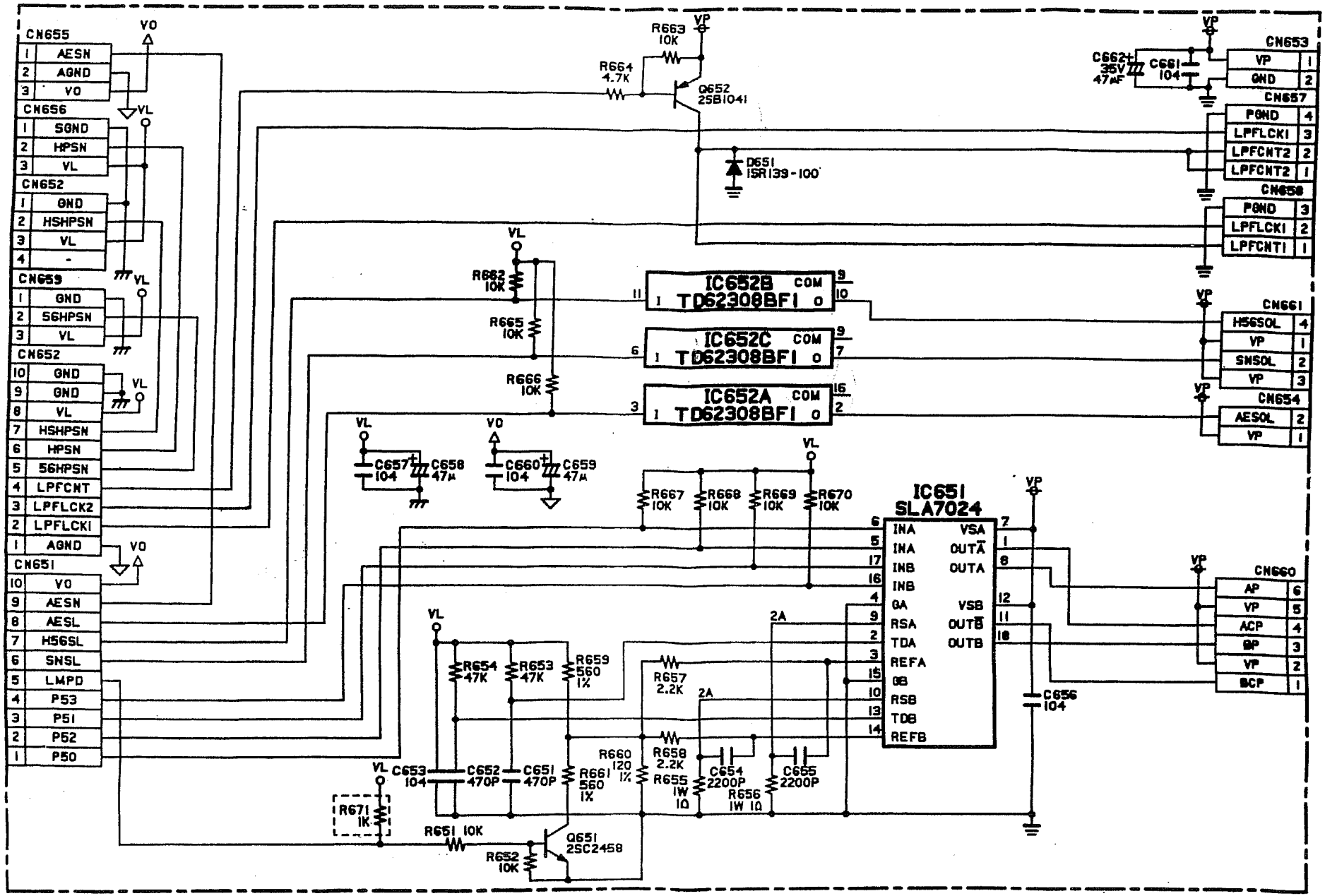
(CN652)

Pin No.	Signal Name	Destination	Status	Function
1	AGND	CPU PCB CN23-1	0V	Ground
2	LPFLCK 2	CPU PCB CN23-2		Lamp unit scanner motor lock 2 signal
3	LPFLCK 1	CPU PCB CN23-3		Lamp unit scanner motor lock 1 signal
4	LPFCNT	CPU PCB CN23-4		Optics cooling fan motor ON/OFF signal
5	56HPSN	CPU PCB CN23-5		No.5/6 mirror unit home position sensor ON/OFF signal
6	HPSN	CPU PCB CN23-6		Full-speed unit home position sensor ON/OFF signal
7	HSHPSN	CPU PCB CN23-7		Half-speed unit home position sensor ON/OFF signal
8	VL	CPU PCB CN23-8		+5VDC power supply
9	SGND	CPU PCB CN23-9	0V	Signal ground
10	SGND	CPU PCB CN23-10	0V	Signal ground

6. Auto original density sensor PCB



5. Optics driver PCB



4. Maintenance chart

Item		Part number	Q'ty per unit	(× 1000) 30	60	90	120
Sheet bypass	Paper feed roller	FFPMA0518	1	○	×	○	× (×)
	DFP roller	FFPMA0520	1	×	×	×	× (×) (×)
	Pick up roller	FFPMA0521	1	×	×	×	× (×) (×)
	Torque limiter ass'y	FFPXF21D80	1	×	×	×	× (×) (×)
Paper feed unit	Paper feed roller	FFPMA05161	1	○	×	○	× (×)
	DFP roller	FFPMA0517	1	×	×	×	× (×) (×)
	Registration roller	FFPMA05136	1	○	○	○	○
	Registration roller	FFPMA0598	1	○	○	○	○
	Cleaning pad ass'y	FFPXF18D804	1	○	○	○	○
	Torque limiter ass'y (Copier and FA-DS16)	FFPXC07D80	1	×	×	×	× (×) (×)
Developer unit	Corona wire	FFPEY00641	1		×		×
	Corona No.1 ass'y	FFPXG07D801	1	○	○	○	○
	Developer	FQ-ZF15	1		×		×
	Drum	FQ-HF13	1	×	×	×	×
	Waste toner bottle	FFPQA0143	1	Replace at 5,000 copies. (for user replacement)			
	Cleaning blade	FFPHK09051	1		×		×

○: Cleaning ×: Replacement
*( ): Replacement cycle based low usage.

*: Service personnel can amend this schedule by taking into account the percentage of paper which has passed through each paper port. We feel this will ensure more effective copier maintenance and cost effectiveness for your customers.

NOTE: When cleaning the mirrors, do not move the lamp unit or half speed unit directly. Rotate the lamp unit drive shaft.

Item		Part number	Q'ty per unit	(× 1000) 30	60	90	120
Fuser unit	Finger upper	FFPLK0336	4	○	○	○	×
	Thermistor	FFPBL0013	1	○	○	○	×
	Lamp	H12V1KWN1A (for 120V ver.) H22V1KWN1A (for 220/240V ver.)	1				×
	Cleaning pad	FFPKM02785	1	Replace at 5,000 copies. (for user replacement)			
	Heat roller	FFPMA05242	1	○	×	○	×
	Pressure roller	FFPMA0523	1	○	×	○	×
	Exit Roller	FFPMA05142	1	○	○	○	○ (Ground terminal side)
Optics	Exposure lamp	E08V025WN2A (for 120V ver.) E16V025WN2A (for 220/240V ver.)	1				×
	No. 1 mirror	FFPGC0179	1				
	No. 2 mirror	FFPGC0180	1				
	No. 3 mirror	FFPGC0181	1				
	No. 4 mirror	FFPGC0174	1	○	○	○	○
	No. 5 mirror	FFPGC0182	1				
	No. 6 mirror	FFPGC0183	1				
	Lens	FFPGA0042	1				
Main body	Filter	FFPHJ00341	1		○		○
	Ozone filter	FFPHJ00351	1		×		×
	Filter	FFPGB0021	1		○		○
	Corona wire	FFPEY00641	1		×		×
	Corona No.2/3 ass'y	FFPXF10D803	1	○	○	○	×
	Cover glass	FFPGC0184	1	○	○	○	○
	Platen glass	FFPGC0154	1	○	○	○	○
	Platen rubber	FFPNN00362	1	○	○	○	○
	Belt shutter	FFPJC0260	1				×

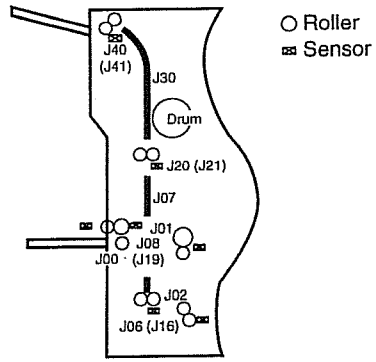
○: Cleaning ×: Replacement

5. Troubleshooting

5-1. User error

Error code	Item	Cause/ Check
o	Power saving and Condensation • To clear the "o", press any DIGIT key.	1. When copying is completed after the lapse of F5-C13-input number.
O	STAND-BY • The DIGIT display indicates "0" and the other displays are turned OFF. • To clear the STAND-BY mode, press any DIGIT key.	1. When copying is completed after the lapse of 2 minutes (F5-C03-1 input), or 4 minutes (F5-C03-2 input), "0" is indicated.
PXX	Add paper	1. This display flashes when there is no paper in tray. 2. When using ADF • Original-size paper is not installed in the copier.
U6	Paper feed door failure (Paper feed console)	1. The paper feed door is opened.
U10	ADF failure	1. The ADF is opened after placed original(s).
U13	Toner empty detection • Cancellation of U13 F5-C63-0 input: Press any DIGIT key. F5-C63-1 input: Press PAPER TRAY and 10 DIGIT keys.	1. When the toner hopper is empty. 2. Toner density sensor is defective. 3. Toner supply mechanism is malfunctioning. 4. CPU PCB is defective.
U16	Developer unit failure • If in service mode and the developer unit is not installed, the "UFX" (X = service mode number) will appear in the DIGIT display.	1. When the developer unit is not installed correctly. 2. When the developer unit connector is not inserted correctly. 3. When the developer unit connector is defective. 4. CPU PCB is defective.

5-2. Paper jam



Jam read code (F8-C06 is in use)	Condition
J00 (FP-7715)	Paper jam (Bypass) • When the timing roller sensor does not detect paper within a predetermined time after bypass paper feed starts rotating.
J01 (FP-7715)	Paper jam (Copier paper tray) • When the timing roller sensor does not detect paper within a predetermined time after paper feed starts rotating.
J02 (FP-7715)	Paper jam (Paper feed console) • When the paper feed console registration roller sensor does not detect paper within a predetermined time after paper feed starts rotating.
J06 (FP-7715)	Paper jam (Paper feed console) • When the trail edge of the paper is not detected within a predetermined time after the registration roller sensor detects the lead edge of the paper.
J16 (FP-7715)	Paper jam (Paper feed console) • The paper feed console registration roller sensor detects paper when the power switch is turned ON.
J07	Paper jam (Bypass) • When the timing roller sensor does not detect paper within a predetermined time after the sheet bypass paper pass sensor detects paper.

Jam read code (F8-C06 is in use)	Condition
J08	• When the trail edge of the paper is not detected within a predetermined time after the sheet bypass paper pass sensor detects the lead edge of the paper.
J19	• When the sheet bypass paper pass sensor detects paper when the power switch is turned ON.
J20	• When the trail edge of the paper is not detected within a predetermined time after the timing roller sensor detects the lead edge of the paper.
J21	• When the timing roller sensor detects paper when the power switch is turned ON.
J30	Paper jam (between timing roller sensor and paper exit sensor) • When paper exit sensor does not detect paper within a predetermined time after the timing roller starts rotating.
J40	• When the trail edge of the paper is not detected within a predetermined time after the paper exit sensor detects the lead edge of the paper.
J41	• The paper exit sensor detects paper when the power switch is turned ON.
J70 (FP-7715)	ADF jam (ADF) • When an original is jammed in the ADF.

5-3. Machine error

E1: Optical unit error

Code	Function/Cause
01	Full-speed unit scan operating • When the full-speed unit does not trigger the full-speed unit home position sensor within a predetermined time.
02 to 20	Not used
21	Half-speed unit scan operating • When the half-speed unit does not trigger the half-speed unit home position sensor within a predetermined time.
22	No. 5/6 mirror unit scan operating • When the No.5/6 mirror unit does not trigger the No. 5/6 mirror unit home position sensor within a predetermined time.
23	F8-C02 miss-input (Measurement input for adjusting the original registration)
24 to 31	Not used
32	Auto original density detection • When the auto original density signal is not detected or the auto original density cannot be adjusted.

Code	Function/Cause
33 to 39	Not used
40	Optics cooling fan (A) motor • When the motor is operating, the motor signal is not detected ON/OFF or motor signal is detected ON/OFF during stops.
41	Optics cooling fan (B) motor (Option) • When the motor is operating, the motor signal is not detected ON/OFF or motor signal is detected ON/OFF during stops.

E2: Paper feed unit error

Code	Function/Cause
01 to 19	Not used
20	Sheet bypass paper pass sensor • When the sensor signal is not detected ON/OFF.

E3: Developer unit and Hopper unit error

Code	Function/Cause
01 to 02	Not used
03	Toner density sensor gain
04 to 09	Not used
10	High voltage power supply leak
11 to 19	Not used
20	Main motor rotation
21	Not used
22	Blacking prevention film
23 to 29	Not used
30	Discharge lamp

E4: Fuser unit error

Code	Function/Cause
01	Fuser warm-up • When the fuser temperature does not reach the predetermined level within a predetermined time.
02 to 09	Not used
10	Fuser cooling fan motor • When the motor signal is not detected ON/OFF or motor signal is detected ON/OFF during stops.

E5: System (+24V/+10V) error

Code	Function/Cause
01	Vp (+24V) line
02 to 03	Not used
04	Vo (+10V) line
05 to 34	Not used
35	EEPROM • Transmission and receiving line (Data, Latch, Clock signal) is defective.
36 to 41	Not used

6. Service mode

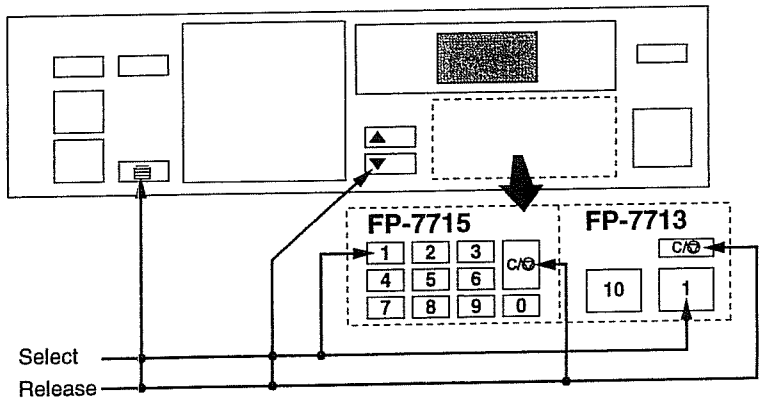
In Service Mode, the technician can check for abnormalities in the copier, The input/output of every section can be checked.

Select : Press the PAPER TRAY, ZOOM DOWN keys and MULTI-COPY key1 (FP-7715)/"1" key (FP-7713).

Release : Press the PAPER TRAY, ZOOM DOWN and CLEAR/STOP keys.

Note:
- If the copier is abnormal, then F4 will appear in the DIGIT display.
- If the copier is left in the "F" mode and shut off after servicing, it will still be in the "F" mode when the copier is turned ON again. The release program must be used to exit "F" mode.
- If the developer unit is not installed, a "UFX" (X = service mode you are in) will appear in the DIGIT display.

Caution: A high voltage hazard remains even when the machine is not operating. Always disconnect the machine from its power source (wall outlet) before servicing or disassembling.



Service mode key function:

Service mode	Item	Function
F1	Display check	Indicators and display check.
F2	Single sheet copying	For single copy operation.
F3	Continuous copying	For continuous copy operation.
F4	Input/Output check	The functioning of Input/Output items (selected item numbers) is checked.
F5	Copier function programming	Various function settings (selected by code numbers) can be changed.
F6	Adjustment and Programming	Various adjustment settings (selected by code numbers) can be changed.
F7	Electronic counter	Reads or Resets the electronic counter.
F8	Copier operating adjustment	Perform pseudo-operation of an item (selected by code numbers).

Note: Memory sheet for F5 and F6, RAM information is attached to the right cover.

F4 mode

Output check

Activate the left cover switch before executing output check.

Code	Item	Function	Remarks
20	Fuser cooling fan	The fan energizes when the PRINT key is pressed.	Visual check. • Press the CLEAR/STOP key to reset.
21	Optics cooling fan (A) and (B)*		
22	Full-speed unit solenoid	The solenoid energizes for 2 seconds when the PRINT key is pressed.	Visual check
23	Half-speed unit solenoid		
24	Not used		
25	Exposure lamp • To avoid light fatigue to the drum, remove the developer unit. • To prevent the temperature from rising, do not carry this out frequently.	The lamp turns ON for 2 seconds when the PRINT key is pressed.	

***NOTE:** Optics cooling fan (B)
FP-7713: option
FP-7715: Standard

Code	Item	Function	Remarks
26	Main motor (Discharge lamp, Developer bias and Fuser cooling fan)	The motor is energized when the PRINT key is pressed.	Visual check. • Press the CLEAR/STOP key to reset.
27	+24V ON	24V is generated when the PRINT key is pressed. **Note:** Connect meter between VP and GND on CPU PCB.	
28	Paper feed roller clutch	The clutch energizes for 2 seconds when the PRINT key is pressed.	Visual check.
29	Sheet bypass clutch		
30	Timing roller clutch		
31	Total counter	The total counter counts up when the PRINT key is pressed.	
32	Fuser lamp	The lamp turns ON for 2 seconds when the PRINT key is pressed.	
33	Paper feed roller clutch (Paper feed console) (FP-7715)	The paper feed roller clutch turns ON for 2 seconds when the PRINT key is pressed.	Visual check. • Press CLEAR/STOP key to reset.
34	Registration roller clutch (Paper feed console) (FP-7715)	The registration roller clutch turns ON for 2 seconds when the PRINT key is pressed.	
35	ADF main motor (forward rotation) (FP-7715)	The ADF main motor rotates forward when the PRINT key is pressed.	
36	ADF main motor (reverse rotation) (FP-7715)	The ADF main motor rotates in reverse when the PRINT key is pressed.	
37	ADF paper feed solenoid (FP-7715)	The solenoid is energized when the PRINT key is pressed.	

F5 mode copier function programming

	Code	Item	Function	(Factory setting)
System	00	Country version **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: Japanese version 1: North American version 2: European version	1 (for America) 2 (for European)
	01	Frequency desired **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: 50Hz 1: 60Hz	0 (for European) 1 (for American)
	02	Auto reset timer **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: None 1: 30 seconds 2: 1 minute 3: 2 minutes	2
	03	Standby timer **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: No standby 1: Standby (2 minutes) 2: Standby (4 minutes)	0
	09	Fuser lamp electronic starting control (When power ON)	0: Zero cross control 1: Phase control	0
	10	Optics cooling fan control **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: Normal operation 1: Exposure lamp turns on time control	1
	11	Copy reservation function **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: Not detecting 1: Detecting	1
	13	Power saving/ Condensation prevention mode **Note:** When it is adjusted, turn the power switch OFF, then ON.	0: None 1: 5 minutes 2: 10 minutes 3: 30 minutes 4: 60 minutes	0
	14	Power saving / Condensation prevention mode selection	0: Power saving mode 1: Condensation prevention mode	0

	Code	Item	Function	(Factory setting)
Optional machine	20	ADF (FP-7715)	0: Cancellation of ADF 1: ADF installation automatically discriminated (When the ADF signal cord is connected to the copier CPU PCB, the copier detects ADF automatically.)	1
	22	Paper feed console (FP-7715)	0: Cancellation of paper feed console 1: Paper feed console installation automatically discriminated (When the Paper feed console signal cord is connected to the copier CPU PCB, the copier detects paper feed console automatically.)	1
	24	Exposure lamp voltage for measuring constant light quantity	0: Not detecting (OFF) 1: Detecting (ON)	1
	33	ADF movement without original (FP-7715)	0: No movement without original 1: ADF movement without original by F2 mode, (Continuing movement)	0
	34	Background for drum compensation	0: No function 1: Exposure 1 step (0.2V) every 1,600 copies = Max. 38 steps 2: Exposure 1 step (0.2V) every 2,000 copies = Max. 30 steps 3: Exposure 1 step (0.2V) every 2,400 copies = Max. 26 steps	1
Counter	40	Double count (Total counter)	0: Single 1: Ledger/A3 size 2: Ledger/Legal/A3/B4 size	1
	41	Count up timing	0: At paper feed roller clutch 1: At paper exit sensor	1

	Code	Item	Function	(Factory setting)
Default	50	Auto original density (When power ON)	0: Not detecting 1: AUTO Mode priority 2: DOCUMENT Mode priority	2
	59	Copier operation (After toner hopper empty detection)	(Factory use only = Do not change this number.) 0: Copier stops or copy cycle is inhibited 1: Continuous copier operation	0
	60	Automatic cassette position selection	0: Not detecting 1: Detecting = When there is no paper in the cassette while the copy cycle, the cassette position of same size and direction selected automatically.	1
	63	U13 clear = After toner empty detection (Copier stops or copy cycle inhibited)	0: When clearing the U13, press any key. 1: Press PAPER TRAY key and 10 DIGIT key (FP-7713)/ 0 key (FP-7715).	0
	65	(Factory use only)		
Preventive maintenance	70	Preventive maintenance	0: No call 1: 1,000 copies 2: 2,000 copies 3: 4,000 copies 4: 16,000 copies 5: 30,000 copies	5

	Code	Item	Function	(Factory setting)
Paper size	81	Legal/Foolscap size selection (For European version)	0: B4 size 1: Foolscap (13" x 8") 2: Foolscap (13" x 8.5")	0
	83	Copy paper size setting (Copier)	0: The first sheet is copied with the largest copy paper size 1: When normally making copies, the size is determined at the time when the paper is in transit before copying 2: A3/Ledger 3: B4/Legal/Foolscap 4: A4/Letter 5: A4R/Letter R 6: A5/Invoice	4
	84	Copy paper size setting (Paper feed console)	0: The first sheet is copied with the largest copy paper size 1: When normally making copies, the size is determined at the time when the paper is in transit before copying 2: A3/Ledger 3: B4/Legal/Foolscap 4: A4/Letter 5: A4R/Letter R 6: A5/Invoice	4
	88	Paper size setting by user (FP-7715)	0: Yes 1: No	0
	89	Optics fan motor 2 error detection	0: Detecting 1: Not detecting	1

F6 mode Adjustment and programming

Code	Item	Function	Remarks
00	100% selection (Ratio of vertical position and parallel position to the paper feed detection) (Standard = 100.7%)	Adjustment from 99.1% to 100.9%	Ratio can be adjusted by 0.1% (–9 to +9)
01	Just 100% ratio (Ratio of parallel position to the paper feed direction)	Adjustment of ratio for parallel position to the paper feed direction.	Ratio can be adjusted by 0.1%. (–9 to +9)
02	100% focus	Adjustment of focus.	(–50 to +50)
03	Just 100% ratio (Ratio of vertical position to the paper feed direction)	Adjustment of ratio for vertical position to the paper feed direction. (+): Enlargement direction. (–): Reduction direction.	(–20 to +20)
04	Original registration detecting timing (Reduction and Enlargement copying)	Adjustment of original registration timing in reduction and enlargement. (+): Registration is delayed. (–): Registration is advanced.	Detection timing can be adjusted by 0.2 mm (–20 to +20) • If you adjust the content of C02 in F8 mode, the content of C04 in F6 mode is automatically changed from the factory setting.
05	Copy paper registration detection timing	After C04 is adjusted, delay time is adjusted from timing roller clutch ON. (+): Paper feed timing is delayed. (–): Paper feed timing is advanced.	Timing can be adjusted by 0.5 mm. (–18 to +20) • If you adjust the content of C02 in F8 mode, the content of C05 in F6 mode is automatically changed from the factory setting.
06	Not used	—	—
07	Registration void of image	After C05 is adjusted, registration void is adjusted. (+): Big (–): Small	Registration void timer can be adjusted by 0.5 mm.
08	Trail edge timing of image (Reduction)	With the original being Ledger/A3 size, adjustment is made for the trail edge that occurs when a 65% copy is made to Ledger/A3 size copy paper.	Trail edge can be adjusted by 0.5 mm. (–20 to +9)

Code	Item	Function	Remarks
09	Not used	—	—
10	Blacking prevention film home position	Adjustment of relation between the blacking prevention film home position and erase position.	0.56 mm (–99 to +99)
11	Exposure standard (standard - 62V for 120V, 124V for 220-240V)	Adjustment of overall exposure standard.	Exposure can be adjusted by 0.2V (for 120V)/0.4V (for 220-240V). (–99 to +99)
12	PHOTO Mode exposure voltage change (standard =+8.2V for 120V/–16.4V for 220-240V)	Adjustment of PHOTO Mode exposure voltage.	Exposure can be adjusted by 0.4V for 120V/0.8V for 220-240V. (–9 to +9)
13	Zoom exposure (Reduction) (65%) (standard=+4.7V for 120V/ –9.4V for 220-240V)	In reduction mode, the exposure voltage is adjusted in proportion to the difference between the reduction ratio and 100% ratio.	Exposure can be adjusted by 0.22V for 120V/0.44V for 220-240V. (–9 to +9)
14	Zoom exposure (Enlargement (141%) (standard=+5.4V for 120V/ +10.8V for 220-240V)	In enlargement mode, the exposure voltage is adjusted in proportion to the difference between the enlargement ratio and 100% ratio.	Exposure can be adjusted by 0.16V for 120V/0.32V for 220-240V. (–9 to +9)
15	Exposure voltage correction for measuring the constant light voltage	The exposure lamp voltage for measuring the light volume is corrected according to the output from the auto original density sensor.	Voltage can be adjusted by 0.2V for 120V/0.4V for 220-240V. (–99 to +99) • If you adjust the content of C03 in F8 mode, the content of C15 in F6 mode is automatically set.
16	Constant light volume exposure lamp voltage correction	When the power is switched ON, the C15 exposure lamp voltage is input to the auto original density sensor. If the auto original density sensor detection value differs from the standard density, the exposure lamp voltage correction is set. When a copy is made, this correction voltage is added.	Voltage can be adjusted by 0.2V for 120V/0.4V for 220-240V.(–99 to +99) • If you adjusted the content of C03 in F8 mode, the content of C16 in F6 mode is automatically set to "0"

Service mode

Code	Item	Function	Remarks
17	Grid standard voltage (standard = –820V)	Adjustment of grid standard voltage. (+): Dark (–): Light	Voltage can be adjusted by approx. –8.3V. (–44 to +16)
18	PHOTO Mode grid voltage (standard = –520V)	Adjustment of PHOTO Mode grid voltage. (+): Dark (–): Light	Voltage can be adjusted by approx. –8.3V. (–8 to +52)
19	Bias standard voltage (standard = –250V)	Adjustment of bias standard voltage. (+): Dark (–): Light	Voltage can be adjusted by approx. –8.3V. (–36 to +24)
20	Not used	—	—
21	Toner density sensor gain voltage (standard = 6V)	(Factory use only) Adjustment of toner density sensor gain voltage.	This adjustment should not be adjusted. • If you adjust the content of F8-C09, the content of F6-C21 will automatically change from the original factory setting.
22 to 25	Not used	—	—
26	Toner density sensor judgment voltage level (standard = 2.5V)	(Factory use only) Adjustment of toner supply starting judgment voltage level.	This adjustment should not be adjusted. • If you adjust the content of F8-C09, the content of F6-C26 will automatically change from the original factory settings.
27 to 30	Not used	—	—
31	Fuser temperature **Note:** When it is adjusted, turn the power switch OFF, then ON.	Adjustment of fuser temperature. (–): Temperature lowers. (+): Temperature raises.	Temperature can be adjusted by approx. 0.7° (–15 to +15)
32	Original density light peak of auto original density level	The level is adjusted in proportion to the ratio between the light peak level and standard level.	The level can be adjusted by 1%. (–99 to +99)
33	Original density average of auto original density level	The level is adjusted in proportion to the ratio between the average level and standard level.	

Code	Item	Function	Remarks
34	Original density (light/dark) contrast of auto original density	This level adjusts contrast by dividing the difference of the minimum and maximum original density by the standard density.	The level can be adjusted by 1%. (–99 to +99)
35	Not used	—	—
36	Registration of original for the ADF (FP-7715)	Adjustment of registration timing.	0.65 mm (–32 to +32)
37 to 40	Not used	—	—
41	Paper loop (Copier paper tray)	(Factory use only) This mode is used to adjust the length of the loop formed before the copier timing roller. (–): Loop length decreased (+): Loop length increased	This adjustment should not be adjusted. Loop can be adjusted by 2.5 ms. (–99 to +99)
42	Paper loop (Sheet bypass)		
43	Not used	—	—
44	Paper loop (Paper feed console) (FP-7715)	This mode is used to adjust the length of the loop formed before the paper registration roller of paper feed console.	2.5 ms. (–99 to +99)
45 to 51	Not used	—	—
52	Reduction mode focus	After C02 is adjusted, when the reduction mode is not in focus, this is adjusted.	(–9 to +9)
53	Enlargement mode focus	After C02 is adjusted, when the enlargement mode is not in focus, this is adjusted.	
54	Not used	—	—
55	Paper loop (Paper feed console) (FP-7715)	This mode is used to adjust the length of the loop formed before the copier.	2.5 ms. (–99 to +99)
56	Trail edge void of image (Copier paper tray)	This mode is used to adjust the trail edge void of image. (–): Void increased. (+): Void decreased.	Trail edge void can be adjusted by 0.5 mm. (–20 to +40)
57	Trail edge void of image (Sheet bypass)		

Code	Item	Function	Remarks
58 to 59	Not used	—	—
60	Fuser temperature for condensation prevention	Adjustment of fuser temperature for condensation. (–): Temperature lowers. (+): Temperature raises.	(–9 to +9)
61	Background for drum	To compensate for the background when there are drum changes, the exposure voltage is increased. (+): Exposure voltage increases. • Always input "0" when the drum is replaced. • When any number is input, F7-C43 (Drum counter) is cleared.	0.2V. (–9 to +38)
62	Toner density	This compensation is added to F6-C21 (Toner density sensor gain adjustment) to set toner density sensor gain voltage. (+): Do not set. (–): Set toner density to light.	0.133V. (–2 to +1)
63 to 98	Not used	—	—
99	Back up memory	Press PRINT key twice. • To clear the F6-all codes = 0 setting. • F5-C00-1 setting.	—

Service mode

F7 mode Electronic counter

Code	Item
21	Total count
22	Preventive maintenance total count **Note:** If more than 30,001 copies (ex.F5-C70-5: 30,000 copies) are input, the "---" will appear in the display.
23	Developer total count
24 to 42	Not used.
43	Drum counter **Note:** If more than 2,001 copies (ex. F5-C34-2: 2,000 copies) are input, the "---" will appear in the display.
44 to 98	Not used
99	Clear all counts

F8 mode Copier operation adjustment

Code	Item
00	Aperture plate for exposure lamp unit adjustment
01	Original registration adjustment copy
02	Measurement input for adjusting the original registration
03	Exposure lamp voltage for measuring constant light quantity • Perform this adjustment after replacing the auto original density sensor.
04 to 05	Not used.
06	Machine error and Paper jam read (This function checks the content of machine error and paper jam)
07	Machine error and Paper jam code read clear
08	Lock operation of full-speed unit, half-speed unit and No.5/6 mirror unit
09	Automatic gain adjustment of toner density sensor • This adjustment must always be performed when replacing developer.

Service mode

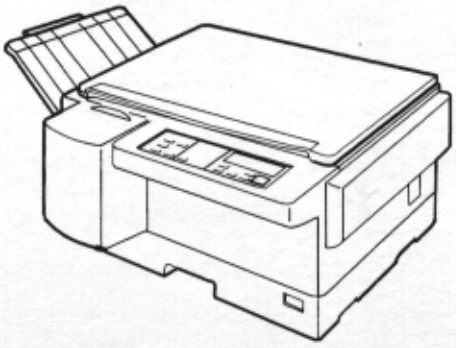
ORDER NO. OED9507303C8

Parts Manual

Revised

Plain Paper Copier

FP-7113



Panasonic

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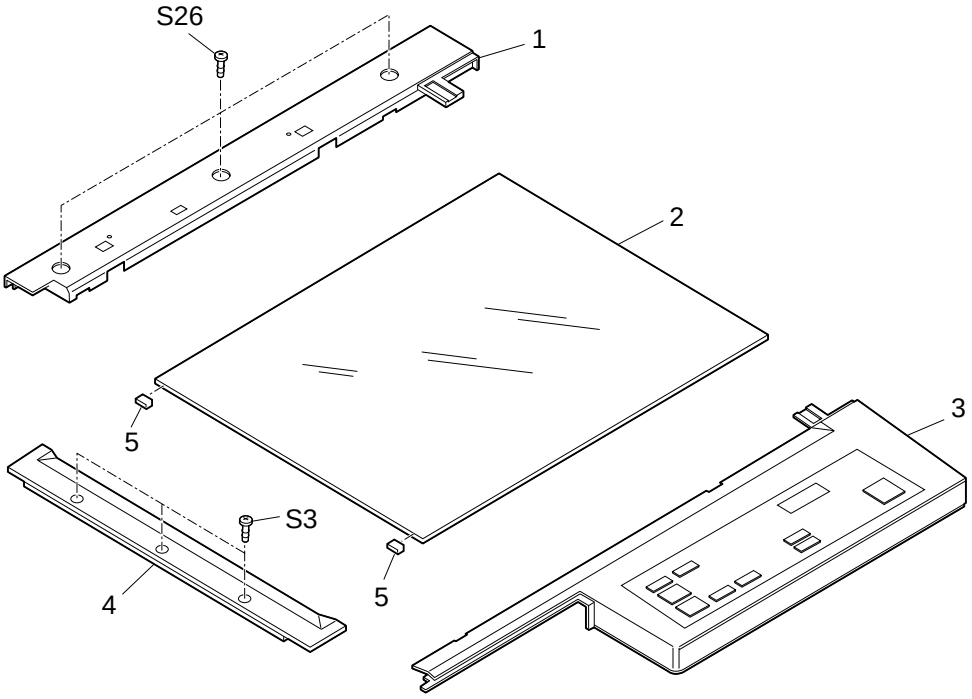
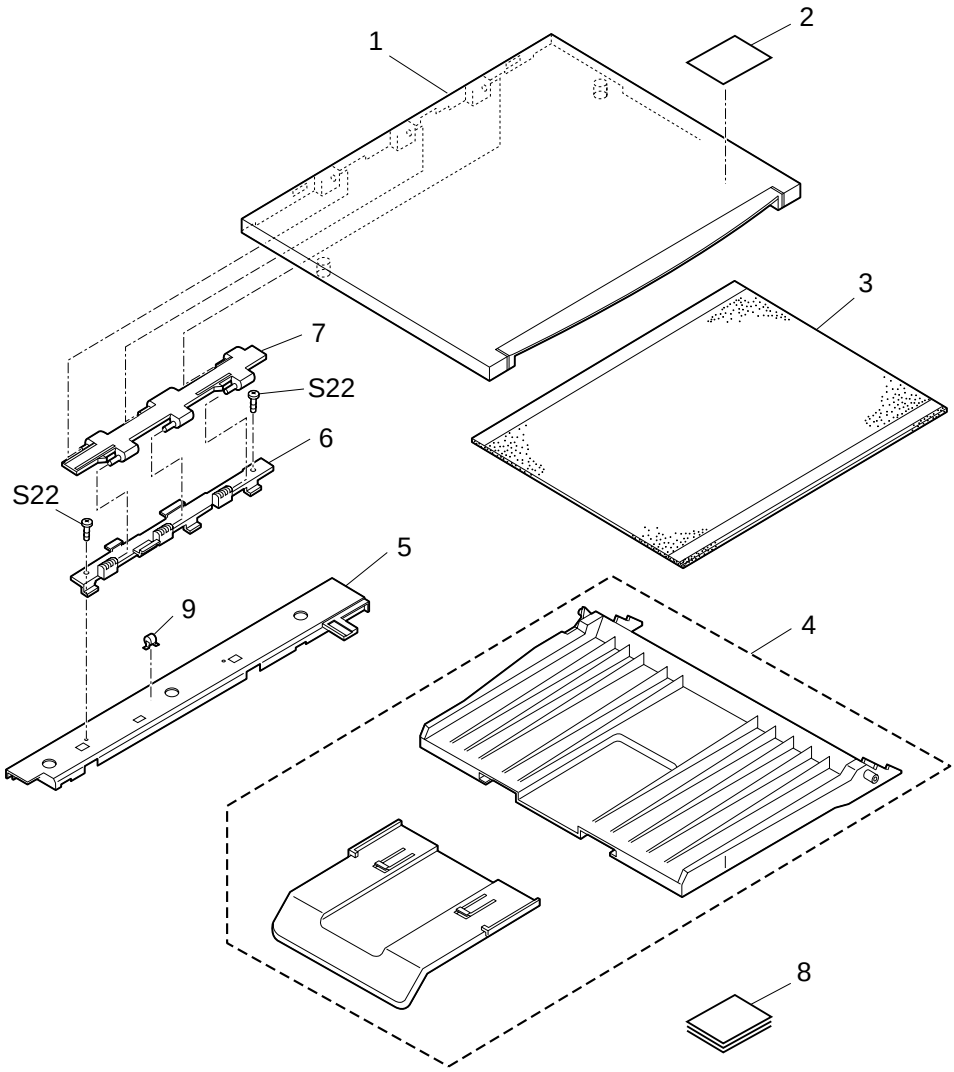
Platen glass



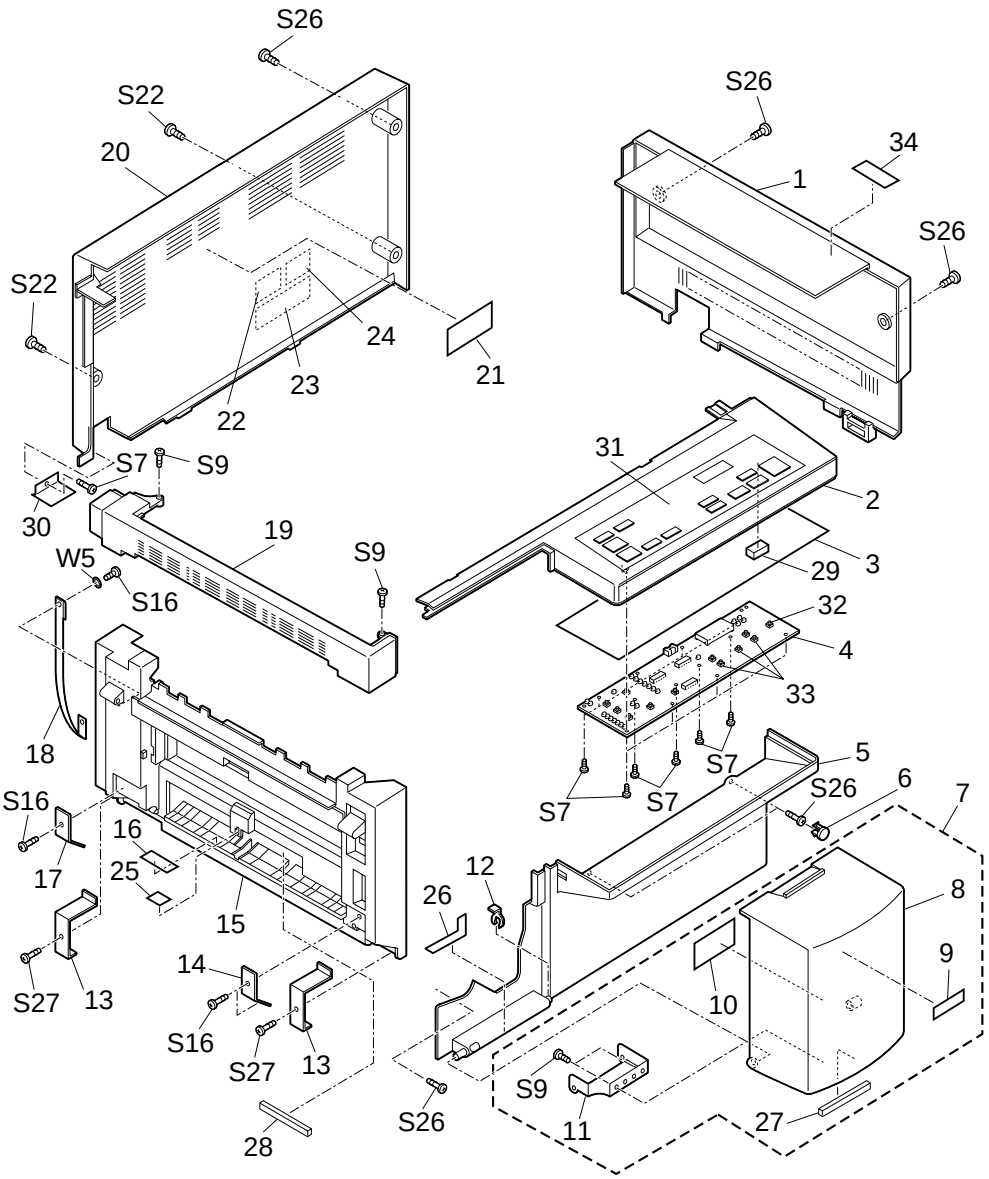
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPNA05711	Top Rear Cover (FP-7713)	P1	1	1
		FFPNA05921	Top Rear Cover (FP-7715)	P1	1	1
		FFPGC0154	Platen Glass	P1	2	1
		FFPXA13D61	Control Panel Ass'y (FP-7713 for North America)	P1	3	1
		FFPXA13D63	Control Panel Ass'y (FP-7713 for others)	P1	3	1
		FFPXA13D67	Control Panel Ass'y (FP-7713 for Taiwan)	P1	3	1
		FFPXA13G01	Control Panel Ass'y (FP-7715 for North America)	P1	3	1
		FFPXA13G03	Control Panel Ass'y (FP-7715 for others)	P1	3	1
		FFPXA13G07	Control Panel Ass'y (FP-7715 for Taiwan)	P1	3	1
		FFPXK29G011	Original Guide Ass'y (for North America)	P1	4	1
		FFPXK29G031	Original Guide Ass'y (Others)	P1	4	1
		FFPXK29G071	Original Guide Ass'y (for Taiwan)	P1	4	1
		FFPKN0271	Glass Cushion (FP-7713)	P1	5	2

Platen Cover



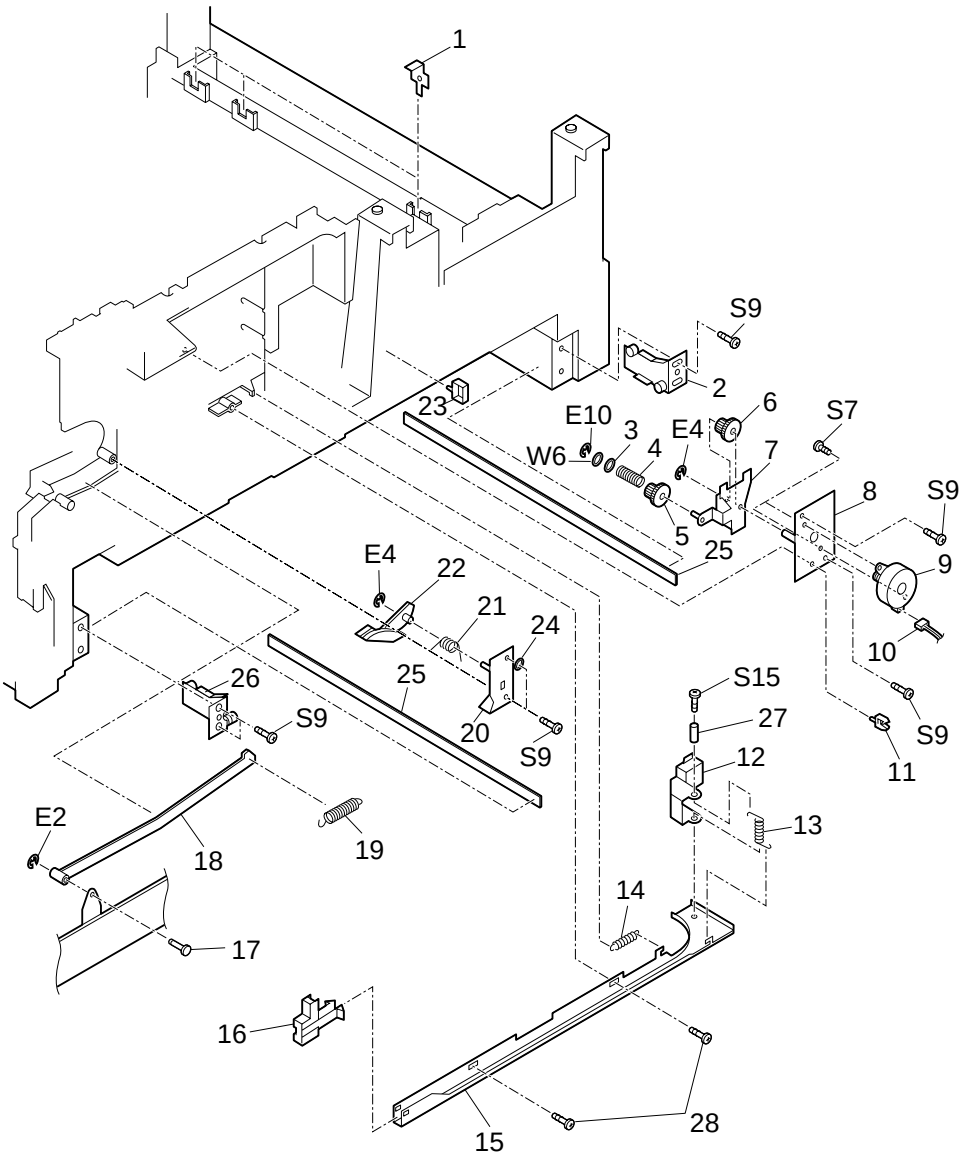
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPNA05753	Platen Cover	P2	1	1
		FFPTE19723	Label, Machine Condition (FP-7713 for North America)	P2	2	1
		FFPTE19733	Label, Machine Condition (FP-7713 for others)	P2	2	1
		FFPTE19792	Label, Machine Condition (FP-7713 for Taiwan)	P2	2	1
		FFPTE20491	Label, Machine Condition (FP-7715 for North America)	P2	2	1
		FFPTE20501	Label, Machine Condition (FP-7715 for others)	P2	2	1
		FFPTE20511	Label, Machine Condition (FP-7715 for Taiwan)	P2	2	1
		FFPNN00352	Platen Rubber (for Taiwan)	P2	3	1
		FFPNN00361	Platen Rubber	P2	3	1
		FFPXJ01D80	Exit Tray Ass'y	P2	4	1
		FFPNA05711	Top Rear Cover (FP-7713)	P2	5	1
		FFPNA05921	Top Rear Cover (FP-7715)	P2	5	1
		FFPNH0059	Platen Hinge, Lower	P2	6	1
		FFPNH0060	Platen Hinge, Upper	P2	7	1
		FFPTD0827	Operating Guide, English (for North America)	P2	8	1
		FFPTD0828	Operating Guide, French (for CANADA)	P2	8	1
		FFPTD0829	Operating Guide ,English	P2	8	1
		FFPTD0830	Operating Guide, German	P2	8	1
		FFPTD0831	Operating Guide, French(except CANADA)	P2	8	1
		FFPTD0832	Operating Guide, Dutch	P2	8	1
		FFPTD0833	Operating Guide, Italian	P2	8	1
		FFPTD0834	Operating Guide, Spanish	P2	8	1
		FFPTD0835	Operating Guide, Swedish	P2	8	1
		FFPTD0836	Operating Guide, Portuguese	P2	8	1
		FFPTD0837	Operating Guide, Taiwan	P2	8	1
		FFPTD0838	Operating Guide, Chinese	P2	8	1
		FFPKM0289	Hinge Holder (FP-7715)	P2	9	1

Platen Cover



PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPNA0570	Right Cover (FP-7713)	P3	1	1
		FFPNA05991	Right Cover (FP-7715)	P3	1	1
		FFPXA24D61	Control Panel Cover, w/o PCB (FP-7713 for North America)	P3	2	1
		FFPXA24D63	Control Panel Cover, w/o PCB (FP-7713 for others)	P3	2	1
		FFPXA24D67	Control Panel Cover, w/o PCB (FP-7713 for Taiwan)	P3	2	1
		FFPXA24G41	Control Panel Cover, w/o PCB (FP-7715 for North America)	P3	2	1
		FFPXA24G43	Control Panel Cover, w/o PCB (FP-7715 for others)	P3	2	1
		FFPXA24G47	Control Panel Cover, w/o PCB (FP-7715 for Taiwan)	P3	2	1
		FFPPJ01861	Insulation Sheet, Control Panel (FP-7713)	P3	3	1
		FFPPJ0195	Insulation Sheet, Control Panel (FP-7715)	P3	3	1
		FFPWB0563	PCB, Control Panel (FP-7713)	P3	4	1
		FFPWB0571	PCB, Control Panel (FP-7715)	P3	4	1
		FFPNA05682	Front Cover	P3	5	1
		FFPPM0009	Screw Cap	P3	6	2
		FFPXA20D80	Toner Hopper Cover Ass'y (FP-7713)	P3	7	1
		FFPXA20G40	Toner Hopper Cover Ass'y (FP-7715)	P3	7	1
		FFPNA0569	Toner Hopper Cover	P3	8	1
		FFPPK1549	Brand Plate (FP-7713)	P3	9	1
		FFPPK1550	Brand Plate (FP-7715)	P3	9	1
		FFPTE19353	Label, Toner Replacement	P3	10	1
		FFPKD12531	Support, Hopper Cover	P3	11	1
		FFPFJ0039	Touch Ring	P3	12	1
		FFPKR1660	Fulcrum Bracket	P3	13	2
		FFPKE0976	Fulcrum Cover, Front	P3	14	1
		FFPNA05675	Left Cover	P3	15	1
		FFPKM02801	Pad	P3	16	1
		FFPKE0977	Fulcrum Cover, Rear	P3	17	1
		FFPKM0274	Belt, Open/Close	P3	18	1
		FFPNA0572	Upper Left Cover	P3	19	1
		FFPNA05732	Back Cover (FP-7713)	P3	20	1
		FFPNA0593	Back Cover (FP-7715)	P3	20	1
		FFPHJ0034	Filter (FP-7713)	P3	21	1
		FFPHJ00341	Filter (FP-7715)	P3	21	1
		FFPTE1763	Label, FCC	P3	22	1
		FFPTE01661	Label, Warranty	P3	23	1
		FFPTE19211	Label, DOC	P3	24	1
		FFPHK0916	Guide Mylar	P3	25	1
		FFPHP0731	Seal, Front Cover	P3	26	1
		FFPHP0732	Seal, Toner Hopper Cover	P3	27	1
		FFPKP00771	Pad 1	P3	28	1
		FFPHP0787	Sponge, Print Key	P3	29	1
		FFPNA0595	Blind Cover (FP-7715)	P3	30	1
		FFPPJ0210	Control Panel Sheet (FP-7713 for North America)	P3	31	1
		FFPPJ0211	Control Panel Sheet (FP-7713 for others)	P3	31	1
		FFPPJ0212	Control Panel Sheet (FP-7713 for Taiwan)	P3	31	1
		FFPPJ0215	Control Panel Sheet (FP-7715 for North America)	P3	31	1
		FFPPJ0216	Control Panel Sheet (FP-7715 for others)	P3	31	1
		FFPPJ0217	Control Panel Sheet (FP-7715 for Taiwan)	P3	31	1
		EVQ21F05B	Print Key Switch (FP-7715)	P3	32	1
		EVQ21505R	Other Key Switch, Print Key switch (FP-7713)	P3	33	20
			(Japan only)	P3	34	

Frame (front)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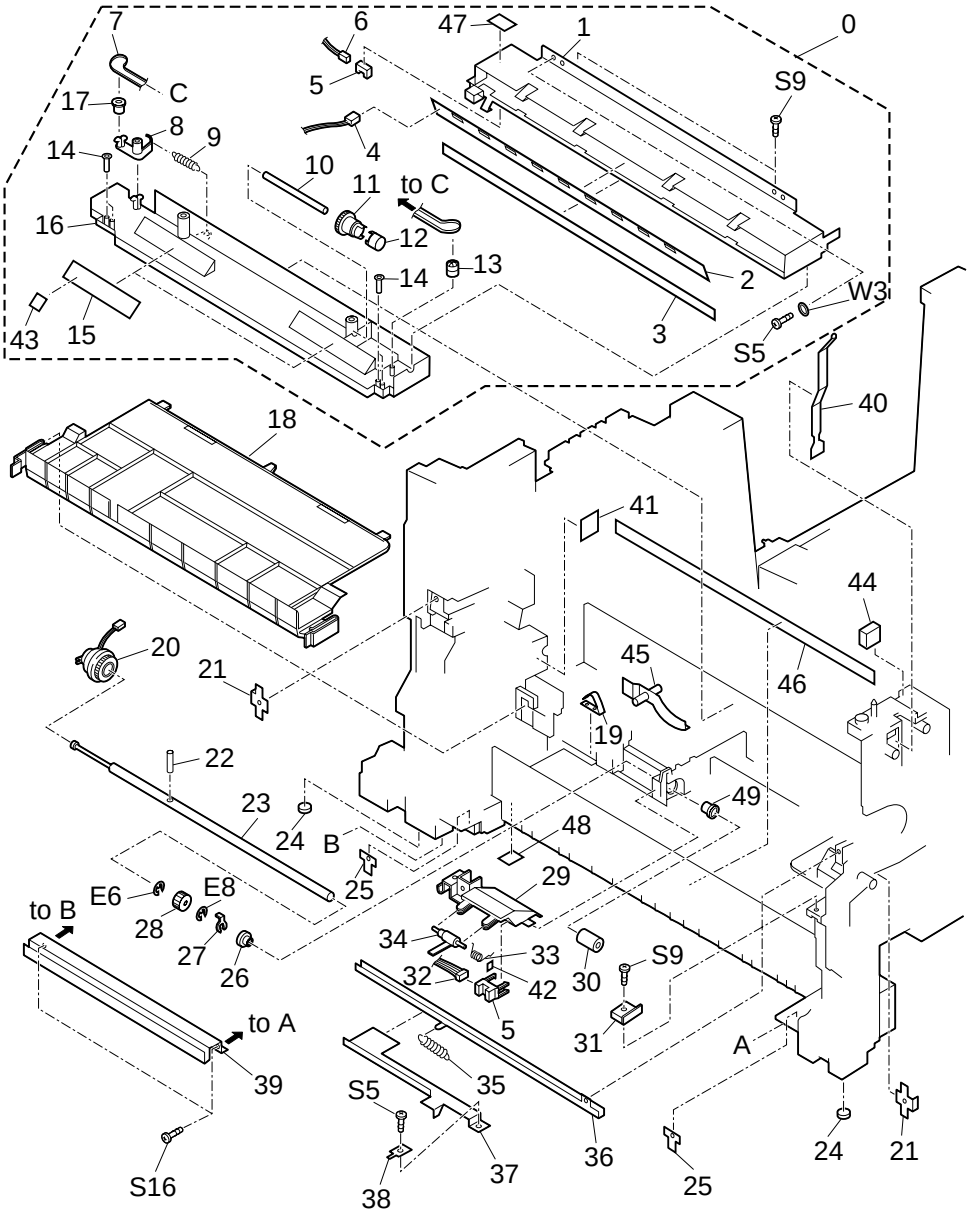
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPFF0071	Nut	P4	1	3
		FFPXA36G801	Roller Bracket, Right	P4	2	1
		FFPMV0002	Polyslider	P4	3	1
		FFPLP0942	Spring	P4	4	1
		FFPMF0945	Gear	P4	5	1
		FFPMF0944	Gear	P4	6	1
		FFPXA23D80	Drive Bracket Sub Ass'y	P4	7	1
		FFPXA22D80	Eraser Drive Frame Ass'y	P4	8	1
		42SPM24DGYM	Stepping Motor	P4	9	1
		FFPWC1540	BSM Harness	P4	10	1
		UAMS05S2	Clamp	P4	11	1
		FFPLK03151	Actuator	P4	12	1
		FFPLR0251	Spring	P4	13	1
		FFPLP0940	Spring	P4	14	1
		FFPKS0999	Connection Plate	P4	15	1
		FFPKM0273	Bracket	P4	16	1
		FFPFG04582	Pin	P4	17	1
		FFPLK03021	Open/Close Arm, Front	P4	18	1
		FFPLP0938	Arm Spring	P4	19	1
		FFPKB0878	Lift Frame, Shutter	P4	20	1
		FFPLR02501	Pressure Spring	P4	21	1
		FFPLL05332	Shutter Lift Lever 1	P4	22	1
		LWS1S	LWS	P4	23	1
		FFPMV0008	Polyslider	P4	24	1
		FFPHK0929	Slide Sheet 1	P4	25	2
		FFPXA37G801	Roller Bracket, Left	P4	26	1
		FFPLT0124	Sleeve	P4	27	1
		FFPFA0069	Shoulder Screw	P4	28	2

Frame (front)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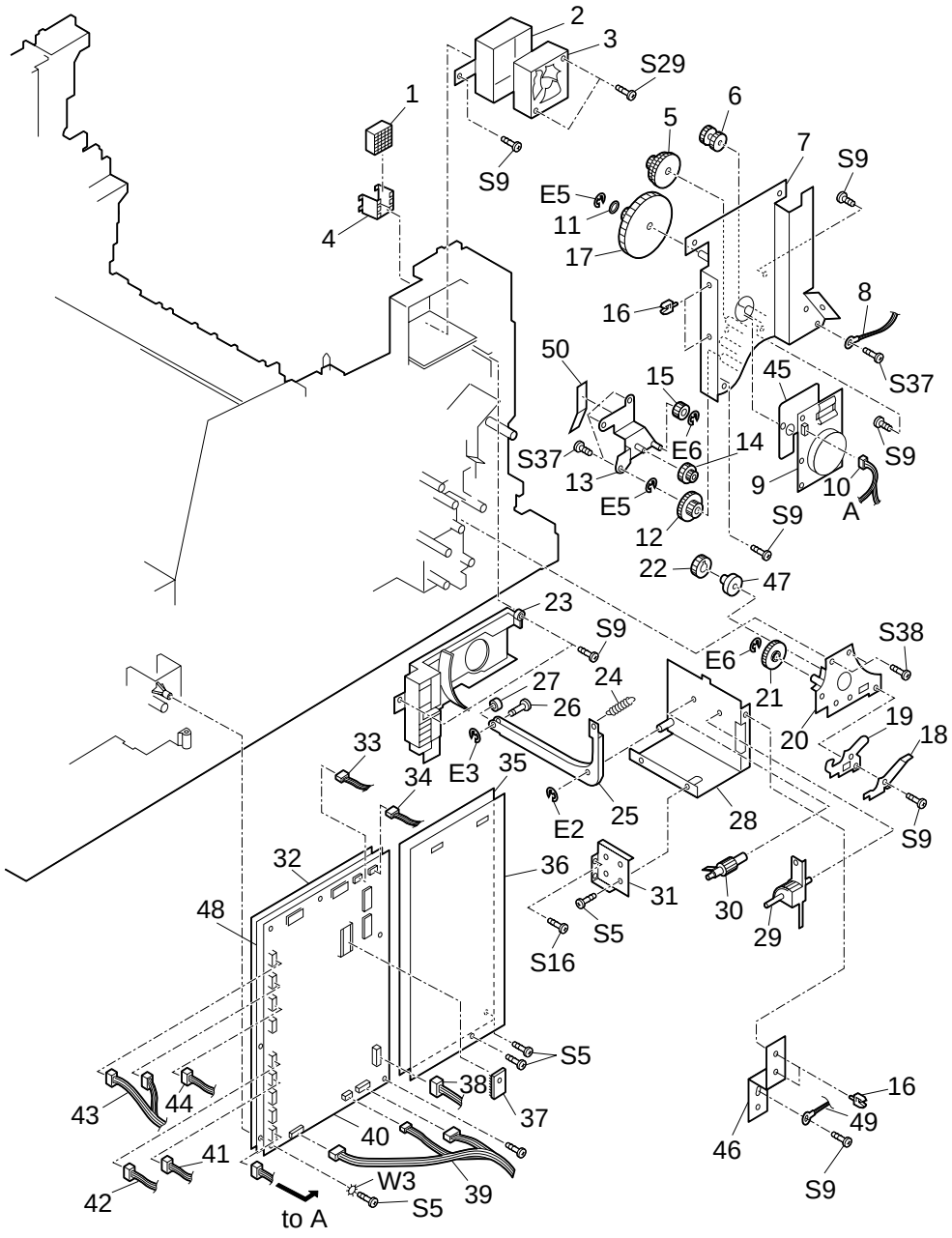
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPXA11D60	Eraser Ass'y (Others)	P5	0	1
		FFPXA11D61	Eraser Ass'y (for North America/Taiwan)	P5	0	1
		FFPXA26D80	Eraser Lamp Frame Ass'y	P5	1	1
		PQ24V12WMG1	Lamp	P5	2	1
		FFPGB0021	Filter	P5	3	1
		FFPWC1550	EL Harness	P5	4	1
		TLP1225	Sensor	P5	5	2
		FFPWC1537	SHPSC Harness	P5	6	1
		FFPJC0260	Belt Shutter	P5	7	1
		FFPLK0304	Pulley Arm	P5	8	1
		FFPLP09391	Tension Spring	P5	9	1
		FFPLG1390	Gear Shaft	P5	10	1
		FFPMF0964	Gear, Idle	P5	11	1
		FFPMF0963	Gear	P5	12	1
		FFPMB0227	Pulley	P5	13	1
		FFPMA0519	Guide Roller	P5	14	4
		FFPGC0185	Reflection Sheet	P5	15	2
		FFPXA25D801	Eraser Base Ass'y	P5	16	1
		FFPMB0224	Pulley	P5	17	1
		FFPKF12226	Paper Guide	P5	18	1
		FFPLQ04401	Lift Spring	P5	19	1
		BJ-3.5-W03	Magnetic Clutch Ass'y (FP-7713)	P5	20	1
		BJ-3.5-W04	Magnetic Clutch 2 Ass'y (FP-7715)	P5	20	1
		FFPFF0071	Nut	P5	21	2
		XPJ2D10WV	Pin	P5	22	1
		FFPLG15721	Paper Feed Roller Shaft	P5	23	1
		FFPNM0028	Foot	P5	24	2
		FFPFF0072	Nut	P5	25	2
		FFPMQ0594	Bushing 1	P5	26	1
		FFPFJ0039	Touch Ring	P5	27	1
		FFPMF0797	DFP Drive Gear	P5	28	1
		FFPKM02761	Bracket, Sensor	P5	29	1
		FFPMA05161	Paper Feed Roller	P5	30	1
		FFPKS10101	Stopper (except North America)	P5	31	1
		FFPWC1543	RS Harness (FP-7713)	P5	32	1
		FFPWC1571	RS Harness (FP-7715)	P5	32	1
		FFPLR02531	Spring	P5	33	1
		FFPLL05341	Sensor Lever	P5	34	1
		FFPLP0959	Spring	P5	35	1
		FFPKD12633	Support Stay	P5	36	1
		FFPKB08691	Slide Plate	P5	37	1
		FFPKF1364	Roller Holder	P5	38	1
		FFPKD12592	Lift Stay	P5	39	1
		FFPLQ0391	Drum Ground Plate	P5	40	1
		FFPHK0923	Mylar	P5	41	1
		FFPKH03071	Spacer	P5	42	1
		FFPJC0221	Sheet, Preventing Reflection	P5	43	2
		FFPKN0334	Cushion	P5	44	1
		FFPLL05471	Sensor Lever (FP-7715)	P5	45	1
		FFPHK0933	Slide Sheet 5	P5	46	1
			(Japan only)	P5	47	
		FFPJC0207	No. 6 Mirror Sheet	P5	48	1
		FFPMQ0602	Bushing 2	P5	49	1

Frame (rear)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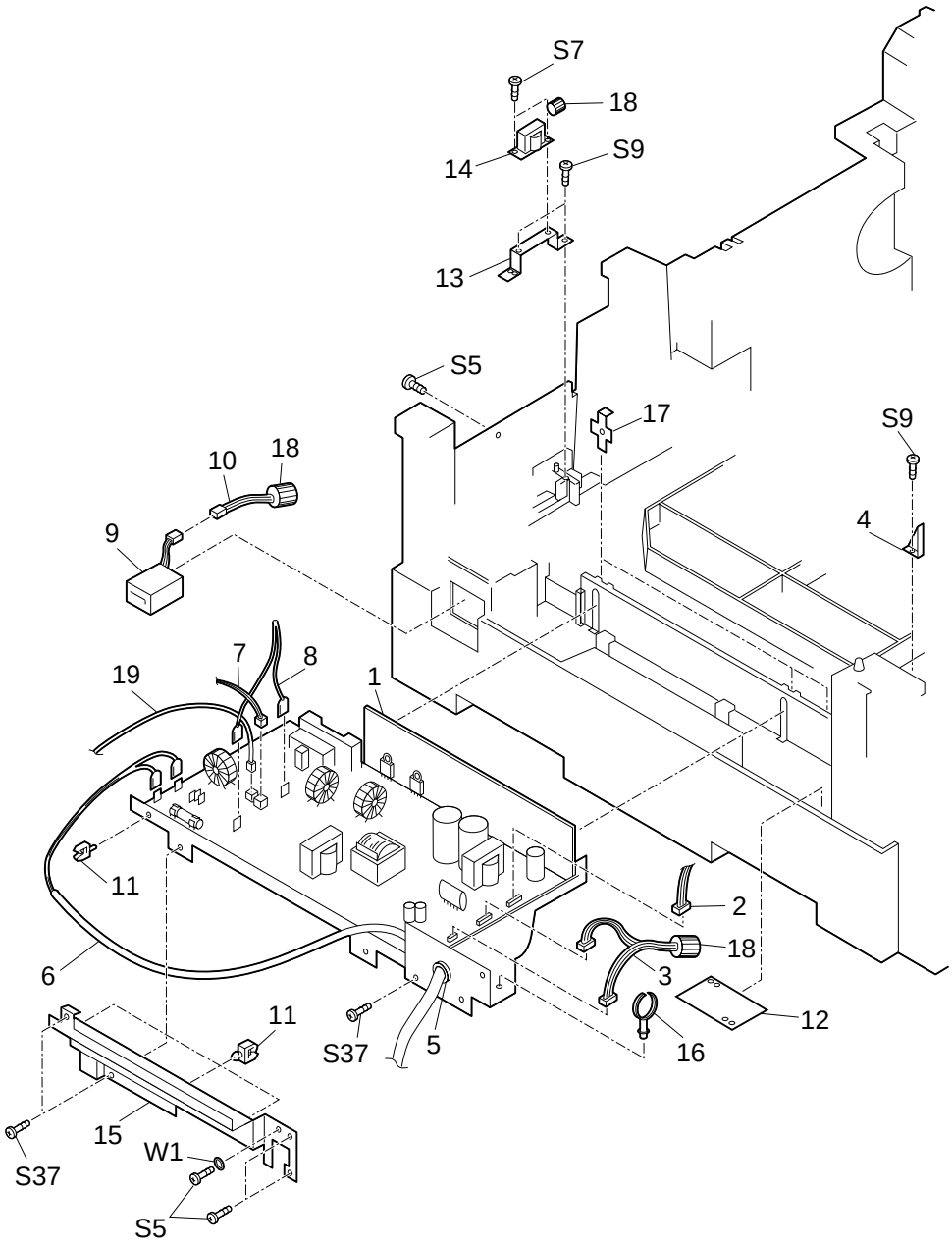
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPHJ00351	Ozone Filter	P6	1	1
		FFPHA00661	Duct (FP-7713)	P6	2	1
		FFPHA0067	Duct (FP-7715)	P6	2	1
		FBA08A24H2F0	Fan Motor 1	P6	3	1
		FFPKD12521	Holder, Ozone Filter	P6	4	1
		FFPMF0936	Gear 1	P6	5	1
		FFPMF09382	Gear, Developer Drive	P6	6	1
		FFPXA17G00	Drive Frame Ass'y	P6	7	1
		FFPWC1555	KBE Harness	P6	8	1
		DNQ18A12R20A	Main Motor	P6	9	1
		FFPWC1535	MF Harness	P6	10	1
		FFPMV0004	Polyslider	P6	11	1
		FFPMF1116	Gear, Paper Feed Drive	P6	12	1
		FFPXA18D80	Drive Bracket 3 Ass'y	P6	13	1
		FFPMF09371	Gear 2	P6	14	1
		FFPMF09391	Gear, Idle 2	P6	15	1
		UAMS05S2	Clamp	P6	16	4
		FFPMF09351	Gear, Drum Drive	P6	17	1
		FFPLQ03954	Spring	P6	18	1
		FFPKH0306	Spacer	P6	19	1
		FFPKS10117	Bracket, Idle Shaft	P6	20	1
		FFPMF0917	Gear, 19T	P6	21	1
		FFPMF09571	Gear, DFP Shaft	P6	22	1
		FFPXA09D80	High Voltage Terminal Ass'y	P6	23	1
		FFPLP09601	Lift Spring	P6	24	1
		FFPLL0536	Cassette Lift Lever	P6	25	1
		FFPLG1007	Lift Roller Shaft	P6	26	1
		FFPMA0374	Lift Roller	P6	27	1
		FFPKQ01621	Lift Base	P6	28	1
		FFPMF0956	Gear, Cassette Lift	P6	29	1
		FFPLK03071	Cassette Lift Arm	P6	30	1
		FFPKS10021	Lift Support Plate	P6	31	1
		FFPKS09972	CPU Shield Plate	P6	32	1
		FFPWC1536	SHPS Harness	P6	33	1
		FFPWC1550	EL Harness	P6	34	1
		EUKMBN602HB	PCB HVPS	P6	35	1
		FFPKE0965	Cover, PCB HVPS	P6	36	1
		FFPAH0204	P-Rom (FP-7713)	P6	37	1
		FFPAH0205	P-Rom (FP-7715)	P6	37	1
		FFPWC1543	RS Harness (FP-7713)	P6	38	1
		FFPWC1571	RS Harness (FP-7715)	P6	38	1
		FFPWC1572	KB Harness (FP-7715)	P6	39	1
		FFPWB0601	PCB CPU (FP-7713)	P6	40	1
		FFPWB06011	PCB CPU (FP-7715)	P6	40	1
		FFPWC1547	VL Harness	P6	41	1
		FFPWC1542	VP Harness	P6	42	1
		FFPWC1538	M Harness	P6	43	1
		FFPWC1540	BSM Harness	P6	44	1
		FFPKB08821	Drive Frame 2	P6	45	1
		FFPKF13741	Clutch Stopper	P6	46	1
		FFPMQ0536	Bushing	P6	47	1
		FFPJC0259	CPU Shield Sheet (for Taiwan)	P6	48	1
		FFPWC1656	Ground Harness (for Taiwan)	P6	49	1
		FFPDE0077	Ground Plate	P6	50	1

Frame (front)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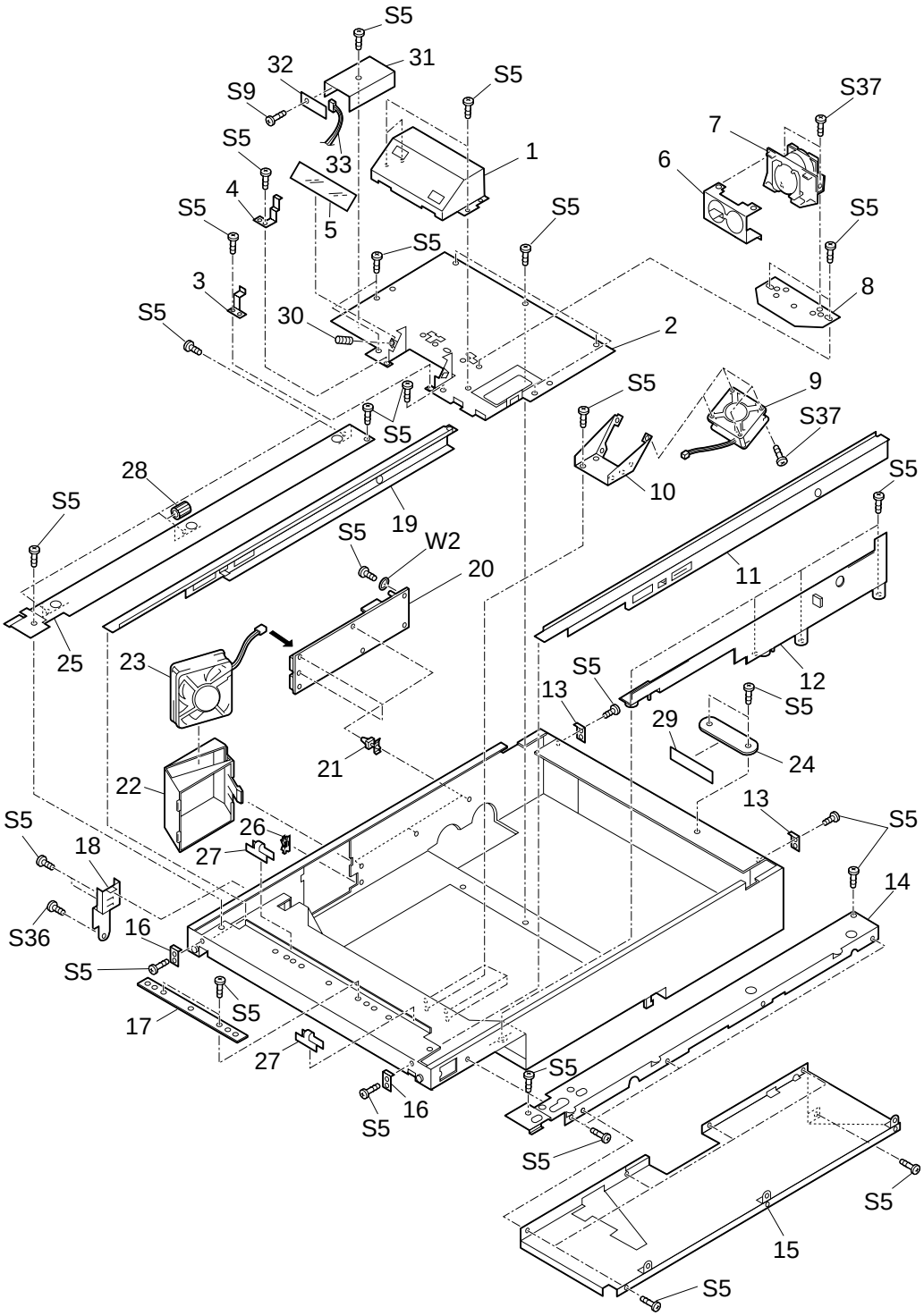
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPWB0564	PCB, Power Supply (FP-7713 for Taiwan)	P7	1	1
		FFPWB05641	PCB, Power Supply (FP-7713 for North America)	P7	1	1
		FFPWB05643	PCB, Power Supply (FP-7715 for Taiwan)	P7	1	1
		FFPWB05644	PCB, Power Supply (FP-7715 for North America)	P7	1	1
		FFPWB05645	PCB, Power Supply (FP-7713 for others)	P7	1	1
		FFPWB05645	PCB, Power Supply (FP-7715 for others)	P7	1	1
		FFPWC1542	VP Harness	P7	2	1
		FFPWC1547	VL Harness	P7	3	1
		FFPKD12822	Optics Support Plate	P7	4	1
		SR6N3-4	Cord Bushing (for North America)	P7	5	1
		SR6N4	Cord Bushing (Others)	P7	5	1
		SR6N4-4	Cord Bushing (for Taiwan)	P7	5	1
		FFPEV0117	Power Cord (Others)	P7	6	1
		FFPEV0118	Power Cord (for Australia)	P7	6	1
		FFPEV0119	Corona Power Cord (for U.K.)	P7	6	1
		FFPEV0130	Power Cord (for Taiwan)	P7	6	1
		FFPEV0132	Power Cord (for North America)	P7	6	1
		FFPEV0135	Power Cord (for China)	P7	6	1
		FFPWC1552	LPC Harness	P7	7	1
		FFPWC1535	MF Harness	P7	8	1
		FFPCV0009	Total Counter	P7	9	1
		FFPWC1538	M Harness	P7	10	1
		LWS1S	LWS	P7	11	4
		FFPKE09841	Cover	P7	12	1
		FFPKD12701	Bracket, Choke Coil (except North America)	P7	13	1
		CH48I40	Choke Coil (except North America/Taiwan)	P7	14	1
		FFPNA0587	Shield Plate, Power Supply	P7	15	1
		HL18-0	Harness Lifter	P7	16	1
		FFPFF0071	Nut	P7	17	3
		E1815MRC	Ferrite Core (except North America)	P7	18	3
		FFPWC1575	ADF Power Sub-Harness(FP-7715)	P7	19	1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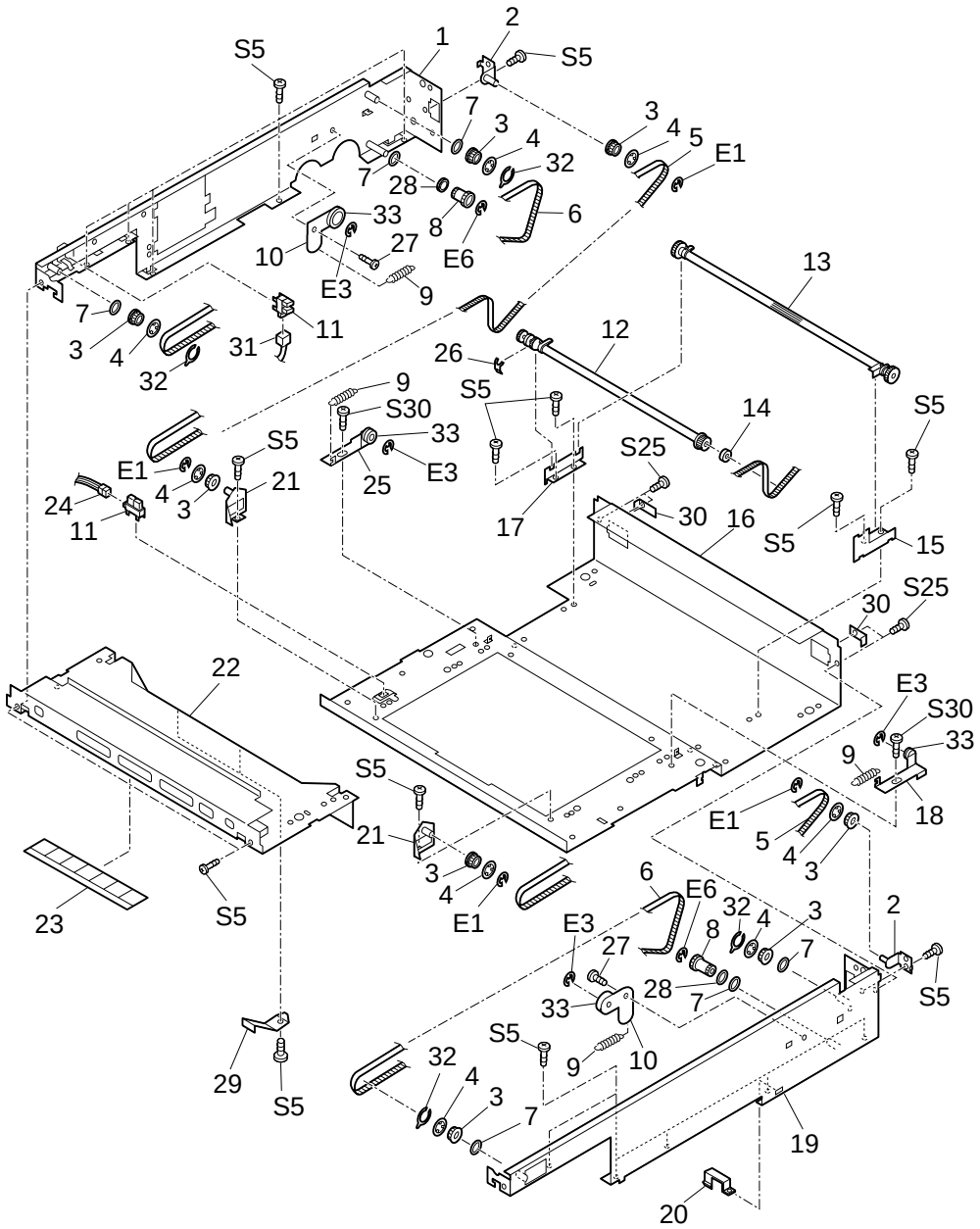
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPKE09633	Lens Cover	P8	1	1
		FFPKB08794	Bottom Plate, Lens	P8	2	1
		FFPLQ0375	Spring	P8	3	1
		FFPLQ0376	Spring	P8	4	1
		FFPGC0174	No. 4 Mirror	P8	5	1
		FFPJC01871	Insulation Sheet	P8	6	1
		FFPGA0074	Lens	P8	7	1
		FFPKS06713	Adjusting Plate, Lens	P8	8	1
		FBA06A24U2CS	Fan Motor 2 (Option for FP-7713)	P8	9	1
		FFPKR16731	Bracket, Fan (FP-7715)	P8	10	1
		FFPKF12153	Optics Rail, Front	P8	11	1
		FFPKF12172	Harness Guide	P8	12	1
		FFPKD1240	Harness Holder	P8	13	2
		FFPKD12373	Glass Support, Front	P8	14	1
		FFPKD12541	Control Panel Stay	P8	15	1
		FFPKD12391	Rail Holder, Left	P8	16	2
		FFPKS0669	Adjusting Plate	P8	17	1
		FFPKD1242	Stopper Plate	P8	18	1
		FFPKF12163	Optics Rail, Rear	P8	19	1
		FFPWB0565	PCB Optics Drive	P8	20	1
		FFPWB05651	PCB Optics Drive (for Taiwan)	P8	20	1
		KGLS6S	Card Spacer	P8	21	3
		FFPHA00651	Duct	P8	22	1
		FBA08A24H2F0	Fan Motor 1	P8	23	1
		FFPKU0173	Support Plate, Right Cover (FP-7715)	P8	24	1
		FFPKD12384	Glass Support, Rear	P8	25	1
		EDS1	Edge Saddle	P8	26	1
		FFPKN0338	Glass Cushion (FP-7715)	P8	27	2
		E1815MRC	Ferrite Core (except North America)	P8	28	1
		FFPHK0927	Protection Sheet	P8	29	1
		XXE3D8FP	Set Screw	P8	30	1
		FFPKE1056	AE Sensor Case	P8	31	1
		FFPWB0580	PCB, AE Sensor	P8	32	1
		FFPWC1766	AE Harness	P8	33	1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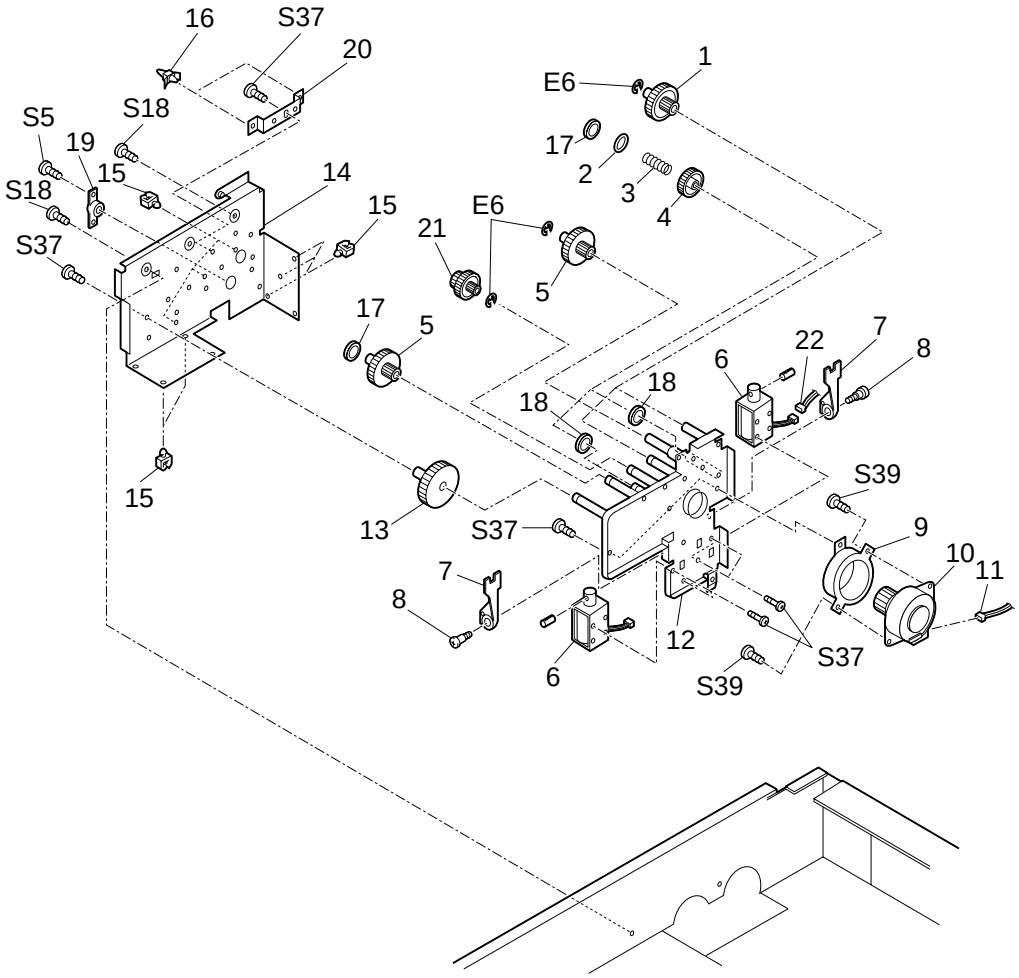
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPKB08758	Rear Frame	P9	1	1
		FFPXK19D80	Pulley Bracket, Right Ass'y	P9	2	2
		FFPMB0220	Pulley 1	P9	3	8
		FFPKQ01423	Flange	P9	4	8
		FFPMN0105	Belt, Half Speed Unit	P9	5	2
		FFPMN0104	Belt	P9	6	2
		FFPMV0004	Polyslider	P9	7	6
		FFPMB02212	Pulley	P9	8	2
		FFPLP1059	Tension Spring	P9	9	4
		FFPXK32D60	Tension Arm Ass'y	P9	10	2
		TLP1225	Sensor	P9	11	2
		FFPXK21D802	Shaft Ass'y, Half Speed Unit	P9	12	1
		FFPXK22D80	Shaft Ass'y	P9	13	1
		FFPMQ0532	Bushing	P9	14	1
		FFPKD12506	Front Stay, Optics	P9	15	1
		FFPKB08526	Bottom Plate, Right	P9	16	1
		FFPKD12514	Rear Stay, Optics	P9	17	1
		FFPXK33D60	Tension Arm Ass'y, Front	P9	18	1
		FFPKB08748	Front Frame	P9	19	1
		FFPKD1241	Harness Holder	P9	20	1
		FFPXK17D80	Pulley Bracket, Left Ass'y	P9	21	2
		FFPKB08832	Bottom Plate, Left	P9	22	1
		FFPDU0063	Discharge Brush	P9	23	1
		FFPWC1533	LPF Harness	P9	24	1
		FFPXK34D60	Tension Arm Ass'y, Rear	P9	25	1
		FFPFJ0033	Touch Ring	P9	26	1
		FFPFA0121	Shoulder Screw	P9	27	2
		FFPMQ0601	Bushing	P9	28	2
		FFPLQ04081	Pressure Spring, Pad	P9	29	2
		FFPKD1283	Bracket, Half Speed Unit	P9	30	2
		FFPWC1546	LHP Harness	P9	31	1
		FFPFJ0042	Touch Ring	P9	32	4
		FFPMB02231	Tension Roller	P9	33	4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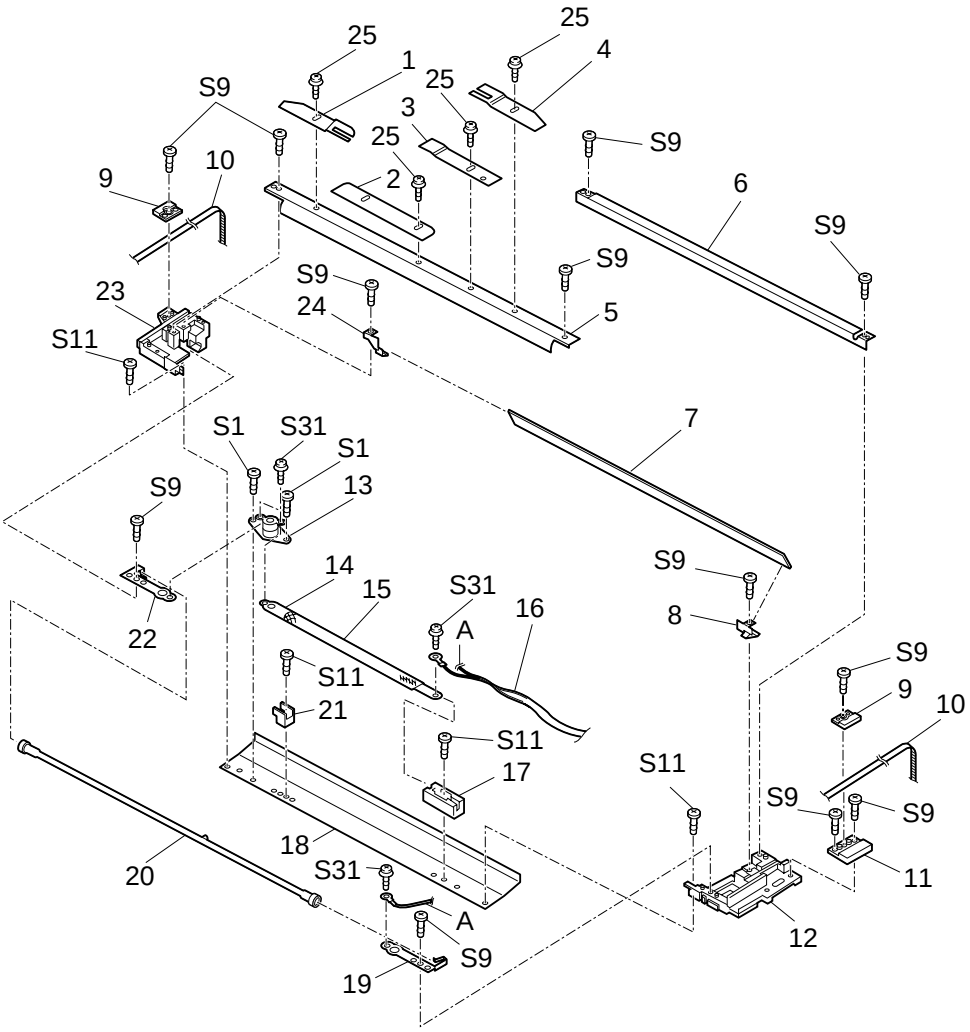
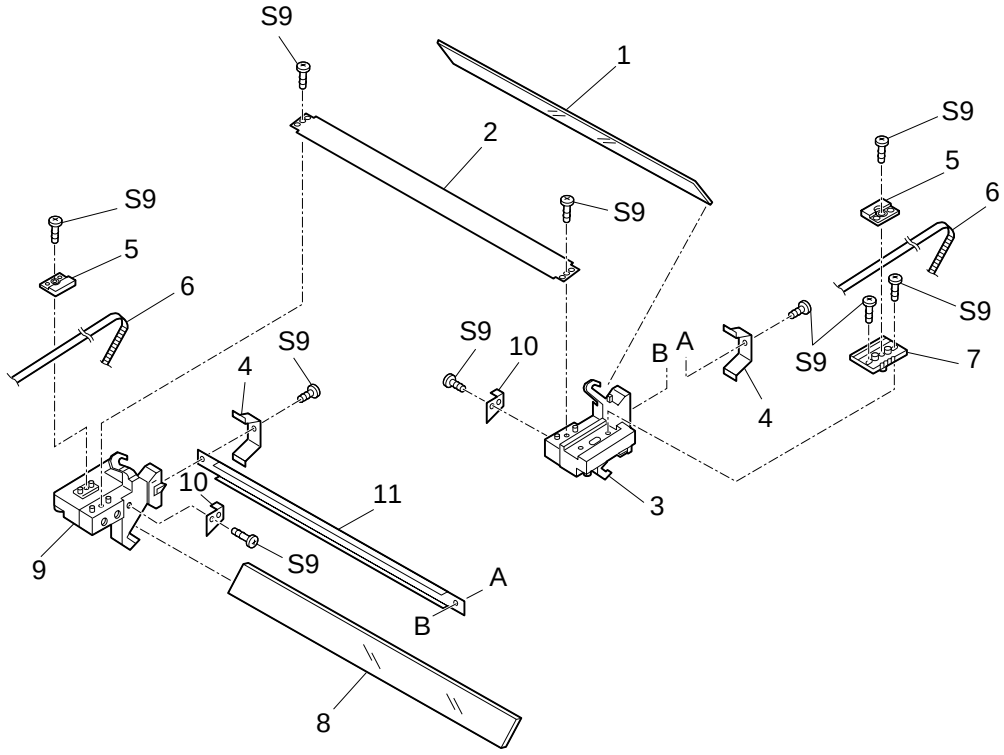
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPMF09331	Gear, Idle 2	P10	1	2
		FFPMV0030	Polyslider	P10	2	2
		FFPLP09371	Selection Spring	P10	3	2
		FFPMF0932	Gear, Idle 1	P10	4	2
		FFPMF0934	Gear, Idle 3	P10	5	2
		FFPXK30D80	Solenoid Ass'y	P10	6	2
		FFPLL0532	Selection Lever	P10	7	2
		FFPLG09411	Slide Shaft Screw	P10	8	2
		FFPHL0010	Damper	P10	9	1
		FFPXK27D80	Motor Ass'y	P10	10	1
		FFPWC1539	LM Harness	P10	11	1
		FFPWC1722	LMD Harness (for Taiwan)	P10	11	1
		FFPKB08763	Motor Frame 1	P10	12	1
		FFPMF09291	Gear, Idle 4	P10	13	1
		FFPKB08594	Motor Frame 2	P10	14	1
		UAMS05S2	Clamp	P10	15	8
		KGLS3S	Card Spacer	P10	16	2
		FFPHP0735	Cushion	P10	17	3
		FFPHP0736	Cushion	P10	18	2
		FFPMQ0525	Motor Bushing	P10	19	1
		FFPKR16721	Bracket, PCB	P10	20	1
		FFPMF0976	Gear, Idle 5	P10	21	1
		FFPWC1721	ZM Harness (for Taiwan)	P10	22	1

Optics-1 (lens)

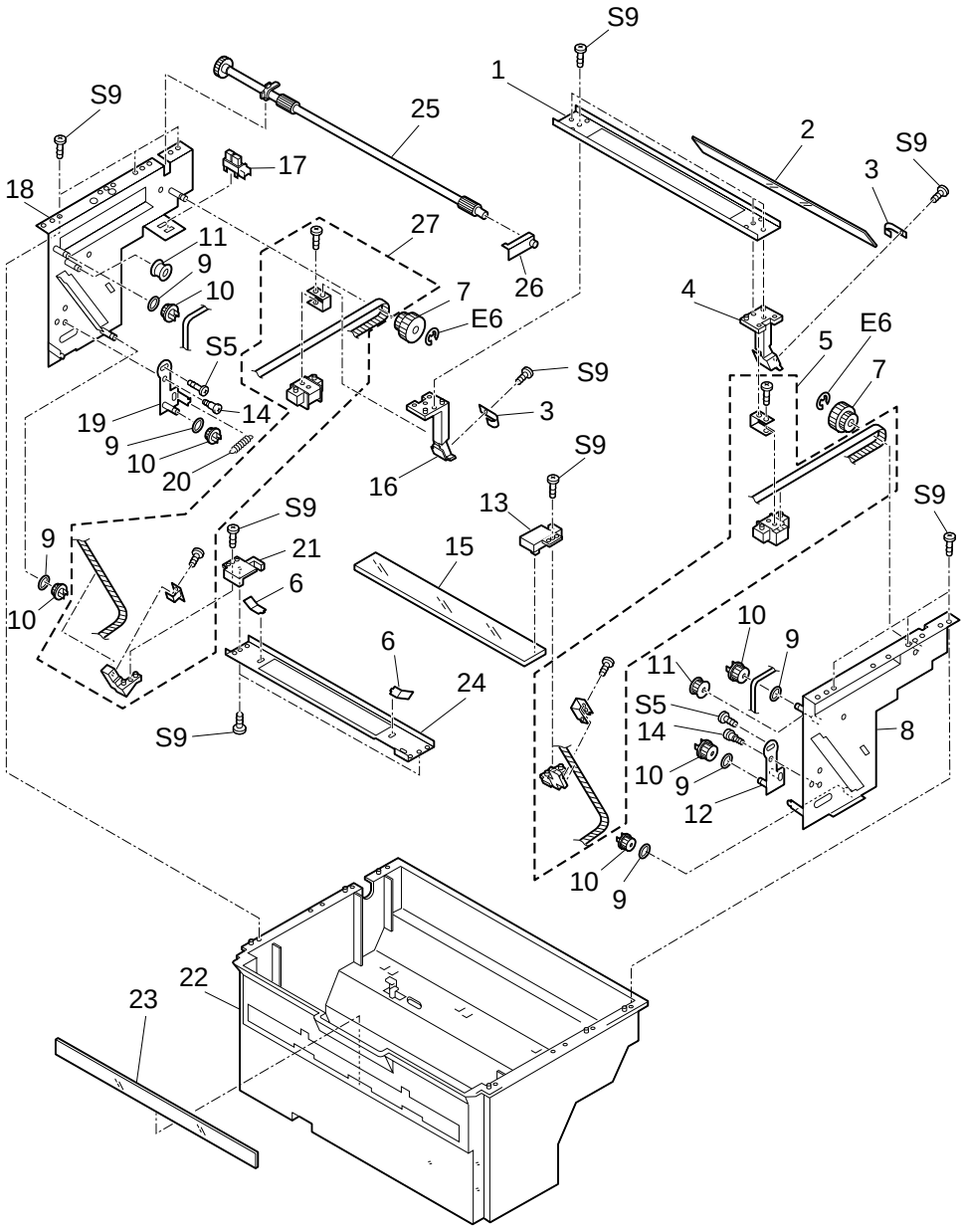


PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPJC02181	Adjust Plate 4, Optics	P11	1	1
		FFPJC0217	Adjust Plate 3, Optics	P11	2	1
		FFPJC02161	Adjust Plate 2, Optics	P11	3	1
		FFPJC02151	Adjust Plate 1, Optics	P11	4	1
		FFPGC0176	Main Reflector, Upper	P11	5	1
		FFPGC0178	Sub Reflector	P11	6	1
		FFPGC0179	No. 1 Mirror	P11	7	1
		FFPLQ03771	Spring	P11	8	1
		FFPKD1243	Belt Holder 1	P11	9	2
		FFPMN0104	Belt	P11	10	2
		FFPKD1244	Belt Holder 2	P11	11	1
		FFPKQ01432	Side Frame, Front	P11	12	1
		FFPET0013	Thermostat	P11	13	1
		FFPDF0254	Terminal Plate	P11	14	1
		FFPEZ0202	Tube	P11	15	1
		FFPWC1553	LP Harness	P11	16	1
		FFPDE0070	Lamp Bracket, Front	P11	17	1
		FFPGC01771	Main Reflector, Lower	P11	18	1
		FFPDF02533	Lamp Terminal, Front	P11	19	1
		E08V025WN2A	Exposure Lamp (for North America/Taiwan)	P11	20	1
		E16V025WN2A	Exposure Lamp (Others)	P11	20	1
		FFPDE0071	Lamp Bracket, Rear	P11	21	1
		FFPDF02552	Lamp Terminal, Rear	P11	22	1
		FFPKQ01442	Side Frame, Rear	P11	23	1
		FFPLQ03781	Spring	P11	24	1
		FFPFA0111	Shoulder Screw	P11	25	4

Optics-1 (lens)



PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPGC0180	No. 2 Mirror	P12	1	1
		FFPKS0994	Connection Plate	P12	2	1
		FFPKQ01452	Side Frame, Front	P12	3	1
		FFPLQ0379	Spring	P12	4	2
		FFPKD1243	Belt Holder 1	P12	5	2
		FFPMN0105	Belt, Half Speed Unit	P12	6	2
		FFPKD1244	Belt Holder 2	P12	7	1
		FFPGC0181	No. 3 Mirror	P12	8	1
		FFPKQ01461	Side Frame, Rear	P12	9	1
		FFPKD12711	Mirror Support	P12	10	2
		FFPKU00952	Support, Half Speed Unit	P12	11	1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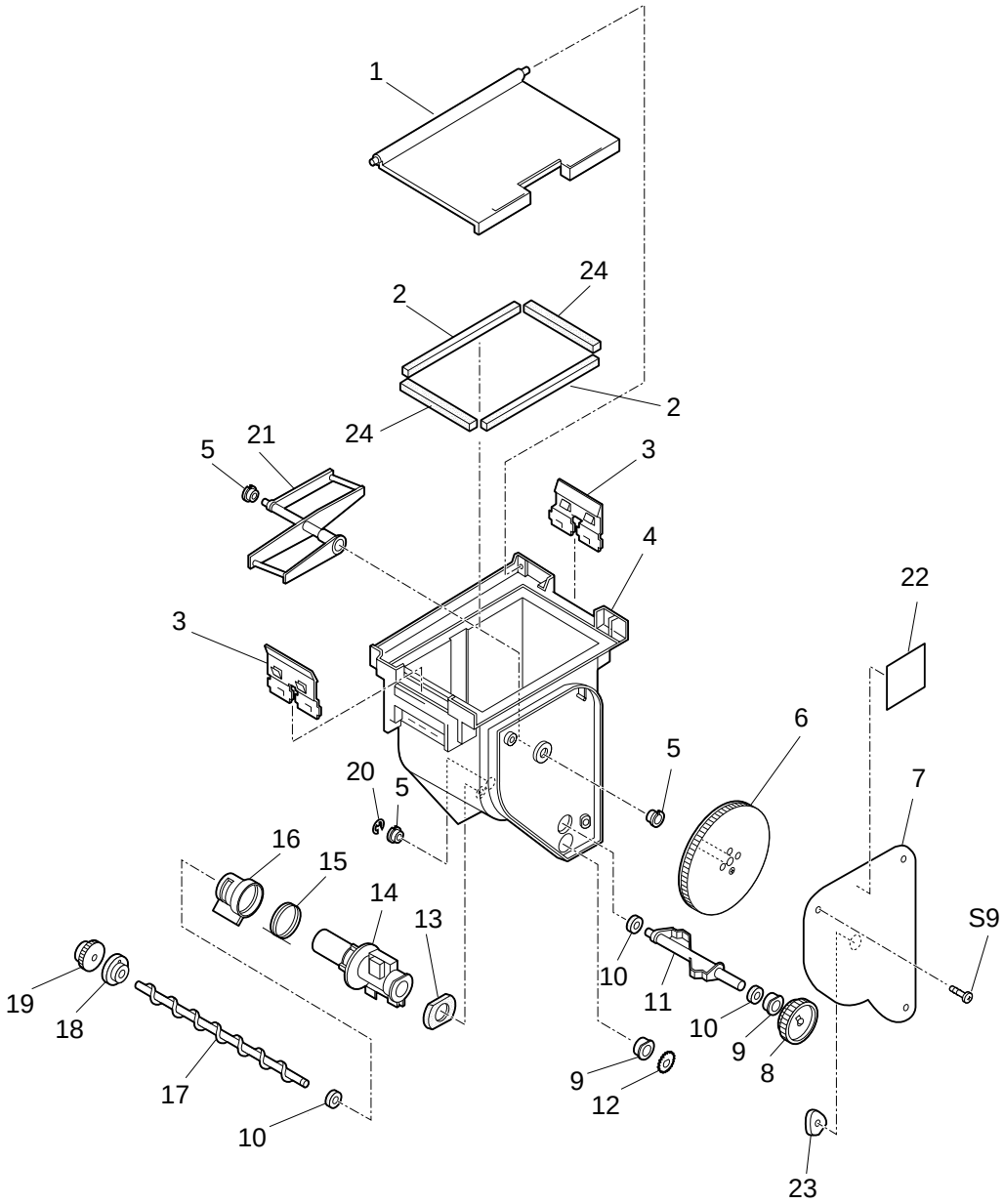
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPKS09961	Support, No. 6 Mirror	P13	1	1
		FFPGC0183	No. 6 Mirror	P13	2	1
		FFPLQ03831	Pressure Spring	P13	3	2
		FFPKD12471	No. 6 Mirror Holder, Front	P13	4	1
		FFPXK03D80	5/6 Belt, Front Ass'y	P13	5	1
		FFPLQ03801	Pressure Spring	P13	6	2
		FFPMB0228	Pulley	P13	7	2
		FFPXK01D60	Drive Bracket, Front Ass'y	P13	8	1
		FFPKQ0150	Flange	P13	9	6
		FFPMB02251	Pulley	P13	10	6
		FFPMB02261	Pulley	P13	11	2
		FFPXK02D80	5/6 Tension Plate, Front Ass'y	P13	12	1
		FFPKD12452	No. 5 Mirror Holder, Front	P13	13	1
		FFPFA0020	Shoulder Screw	P13	14	2
		FFPGC0182	No. 5 Mirror	P13	15	1
		FFPKD12481	No. 6 Mirror Holder, Rear	P13	16	1
		TLP1225	Sensor	P13	17	1
		FFPXK05D60	Drive Bracket, Rear Ass'y	P13	18	1
		FFPXK06D80	5/6 Tension Plate, Rear Ass'y	P13	19	1
		FFPLP0958	Tension Spring	P13	20	1
		FFPKD12462	No. 5 Mirror Holder, Rear	P13	21	1
		FFPKE09645	Optics Unit Cover	P13	22	1
		FFPGC0184	Cover Glass	P13	23	1
		FFPKS09951	Support, No. 5 Mirror	P13	24	1
		FFPXK12D80	Connection Shaft Ass'y	P13	25	1
		FFPMQ05052	Bushing	P13	26	1
		FFPXK07D80	5/6 Belt, Rear Ass'y	P13	27	1

Toner hopper unit



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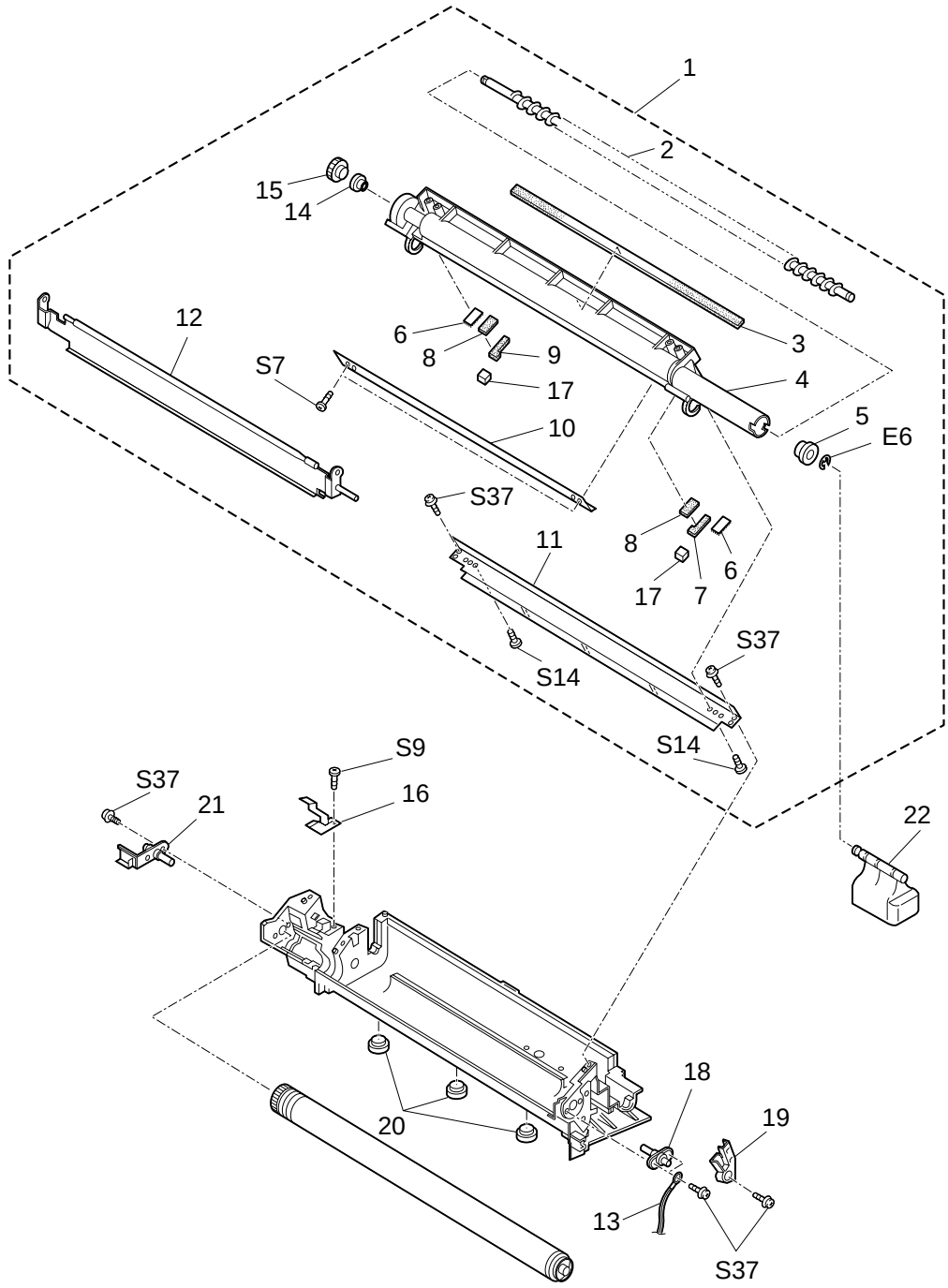
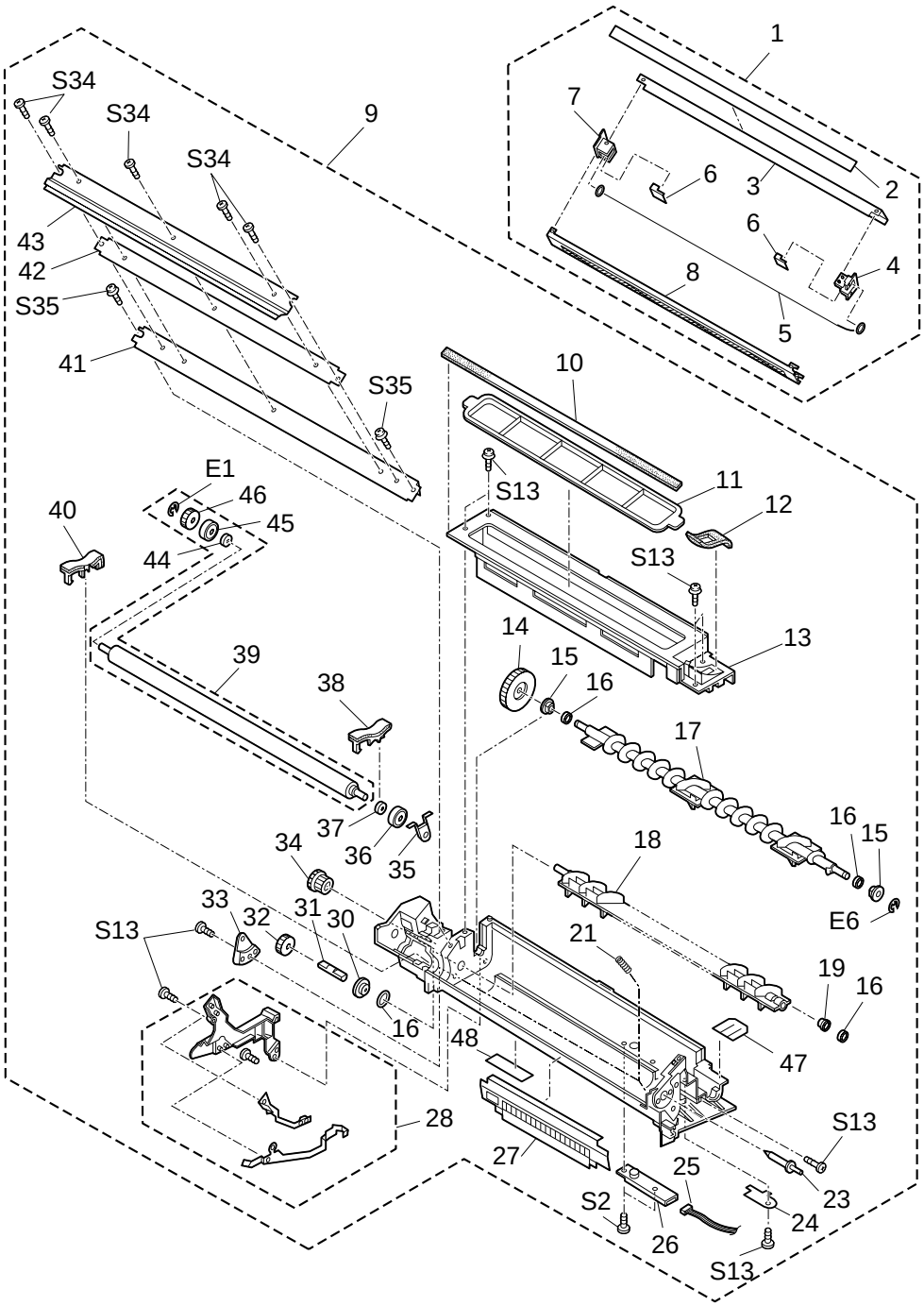
		FFPKE0973	Inner Hopper Cover	P14	1	1
		FFPHP0785	Side Seal B	P14	2	2
		FFPKF12211	Stopper	P14	3	2
		FFPKB08681	Hopper Frame	P14	4	1
		FFPMQ0376	Bushing	P14	5	3
		FFPMF0952	Gear	P14	6	1
		FFPKE09791	Gear Cover	P14	7	1
		FFPMF0953	Gear	P14	8	1
		FFPMQ0512	Bushing	P14	9	2
		FFPHP0724	Bushing Seal	P14	10	3
		FFPLG1409	Shaft	P14	11	1
		FFPMF0954	Gear	P14	12	1
		FFPHP0722	Pipe Seal	P14	13	1
		FFPHD00211	Pipe, Toner Supply	P14	14	1
		FFPLP0949	Shutter Spring	P14	15	1
		FFPKM02752	Pipe Shutter	P14	16	1
		FFPHG00451	Coil, Toner Supply	P14	17	1
		FFPMQ0513	Bushing	P14	18	1
		FFPMF0955	Coil Gear, Rear	P14	19	1
		FFPFJ0033	Touch Ring	P14	20	1
		FFPHH00781	Agitator	P14	21	1
		FFPTE2020	Label, Prohibition Waste Toner	P14	22	1
		FFPHP0733	Sponge, Gear Cover	P14	23	1
		FFPHP0784	Side Seal A	P14	24	2

Developer unit



PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPXG10D60	Cleaning Frame Ass'y (for Taiwan)	P15	1	1
		FFPXG10D61	Cleaning Frame Ass'y	P15	1	1
		FFPHG0044	Recycle Coil	P15	2	1
		FFPHP0714	Seal 1	P15	3	1
		FFPKB08673	Cleaning Frame	P15	4	1
		FFPMQ0509	Bushing	P15	5	1
		FFPHP0717	Seal 4	P15	6	2
		FFPHP0716	Seal 3	P15	7	1
		FFPHP0715	Seal 2	P15	8	2
		FFPHP0719	Seal 5	P15	9	1
		FFPKD12571	Stay	P15	10	1
		FFPHK09051	Cleaning Blade	P15	11	1
		FFPXG14D802	Drum Cover Ass'y	P15	12	1
		FFPWC1723	TS Harness	P15	13	1
		FFPMQ0276	Bushing	P15	14	1
		FFPMF0951	Coil Gear	P15	15	1
		FFPDF02612	Grid Lead	P15	16	1
		FFPHP0730	Seal 6	P15	17	2
		FFPLG1407	Drum Shaft, Front	P15	18	1
		FFPKD1258	Discharge Holder	P15	19	1
		FFPLA0090	Cap	P15	20	3
		FFPLG14081	Drum Shaft, Rear	P15	21	1
		FFPQA0143	Waste Toner Bottle	P15	22	1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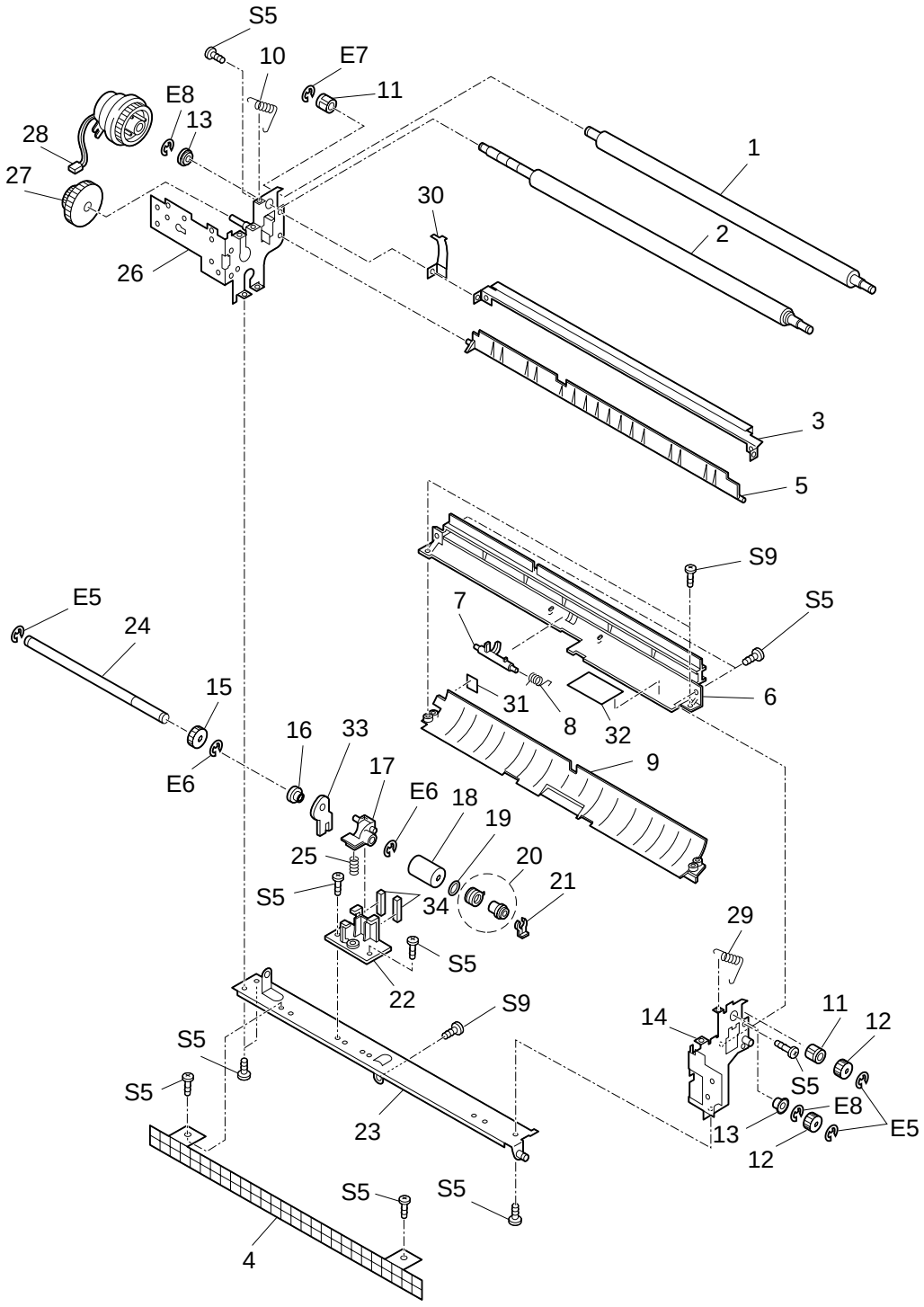
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPXG07D801	Corona No.1 Ass'y	P16	1	1
		FFPHK0908	Blind Sheet	P16	2	1
		FFPJA0270	Frame, No.1 Corona	P16	3	1
		FFPKQ01581	Corona Block 1	P16	4	1
		FFPEY00641	Corona Wire	P16	5	1
		FFPJA0271	Corona Cover 1	P16	6	2
		FFPXG06D80	Corona Block 2	P16	7	1
		FFPKQ0160	Corona Grid	P16	8	1
		FFPXG12D811	Developer Unit Ass'y	P16	9	1
		FFPXG12D87	Developer Unit Ass'y (for Taiwan)	P16	9	1
		FFPHP0718	Seal, Frame Cover	P16	10	1
		FFPQF0033	Cap	P16	11	1
		FFPHP07132	Hopper Seal	P16	12	1
		FFPKE09711	Frame Cover	P16	13	1
		FFPMF0949	Transfer Gear	P16	14	1
		FFPMQ0166	Bushing	P16	15	2
		FFPHP05531	G Seal	P16	16	4
		FFPHG00431	Supply Coil	P16	17	1
		FFPKS10012	String Paddle	P16	18	1
		FFPMQ0510	Bushing	P16	19	1
		FFPLP0948	Pressure Spring	P16	21	2
		FFPLG1406	Paddle Shaft 2	P16	23	1
		FFPKE0969	Sensor Cover	P16	24	1
		FFPWC1551	TDC Harness	P16	25	1
		TS0524ANA71C	TDC Sensor	P16	26	1
		FFPXG11D801	Cover Ass'y	P16	27	1
		FFPXG08D801	Terminal Case Ass'y	P16	28	1
		FFPMQ0166	Bushing	P16	30	1
		FFPLG1405	Paddle Shaft 1	P16	31	1
		FFPMF0948	Gear, Paddle	P16	32	1
		FFPMQ0508	Bushing	P16	33	1
		FFPMF0950	Gear, Idle 1	P16	34	1
		FFPMF0974	Gear, Idle 1 (for Taiwan)	P16	34	1
		FFPKQ01531	Support, Magnetic Pole	P16	35	1
		FFPHQ00441	Spacer Ring, Front	P16	36	1
		FFPHQ0047	Spacer Ring, Front (for Taiwan)	P16	36	1
		FFPHQ0045	Bushing	P16	37	1
		FFPKQ01632	Magnetic Roller Stopper, Front	P16	38	1
		FFPXG02D801	Magnetic Roller Ass'y (for Taiwan)	P16	39	1
		FFPXG02D81	Magnetic Roller Ass'y	P16	39	1
		FFPKQ01642	Magnetic Roller Stopper, Rear	P16	40	1
		FFPKD1265	Blade Stay	P16	41	1
		FFPHK0904	Doctor Blade	P16	42	1
		FFPKE0968	Cover, Toner Dispersion	P16	43	1
		FFPMQ0507	Bearing	P16	44	1
		FFPHQ00431	Spacer Ring, Rear	P16	45	1
		FFPHQ0048	Spacer Ring, Rear (for Taiwan)	P16	45	1
		FFPMF0947	Magnetic Roller Gear	P16	46	1
		FFPMF0973	Magnetic Roller Gear (for Taiwan)	P16	46	1
		FFPHK09111	Mylar	P16	47	1
		FFPHK09141	Sheet	P16	48	1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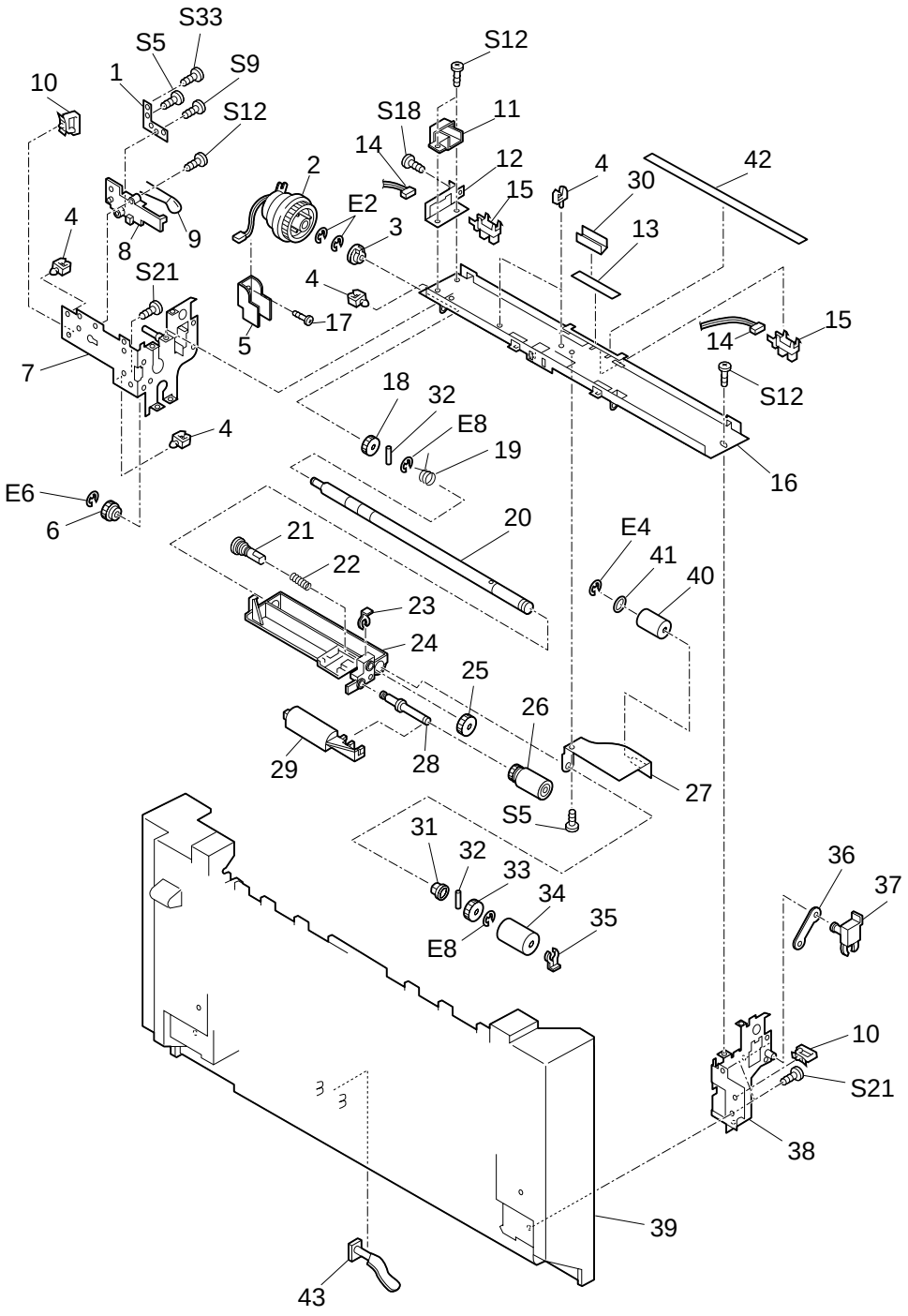
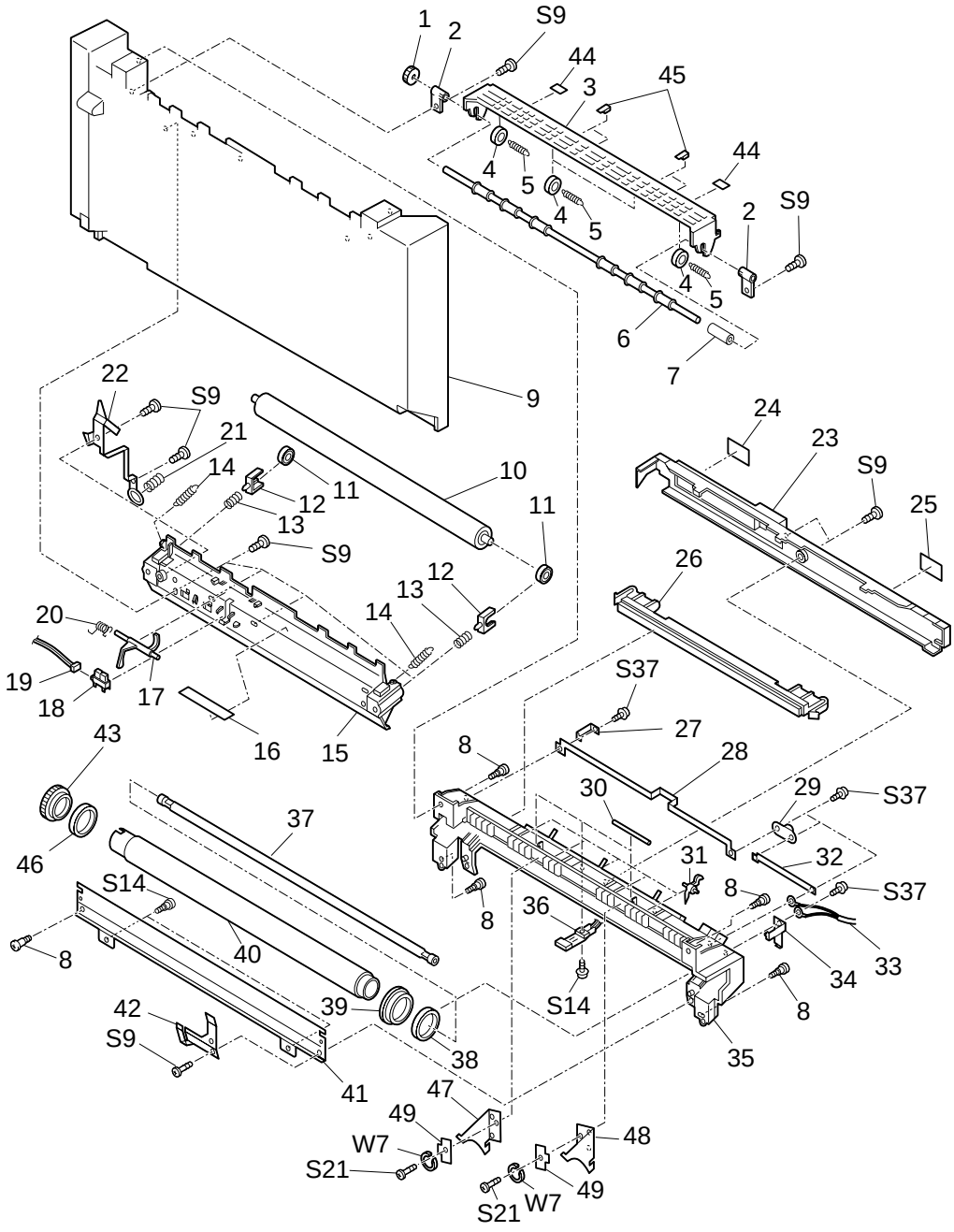
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPMA0600	Registration Roller (Rubber)	P17	1	1
		FFPMA0598	Registration Roller (Steel)	P17	2	1
		FFPXF18D804	Cleaning Pad Ass'y	P17	3	1
		FFPKF12481	Paper Guide 2 (FP-7715)	P17	4	1
		FFPKF1229	Flapper Plate	P17	5	1
		FFPKF12282	Paper Guide 3	P17	6	1
		FFPLL05382	Sensor Lever	P17	7	1
		FFPLR02582	Spring	P17	8	1
		FFPKF12271	Paper Guide 2	P17	9	1
		FFPLP09521	Pressure Spring	P17	10	1
		FFPMQ0515	Bushing	P17	11	2
		FFPMF0724	Gear, Registration Roller	P17	12	2
		FFPMQ04511	Bushing (FP-7713)	P17	13	2
		FFPMQ0517	Bearing (FP-7715)	P17	13	2
		FFPKB08732	Front Frame, Bypass	P17	14	1
		FFPMF09661	Gear, DFP Shaft	P17	15	1
		FFPMQ0521	Bushing	P17	16	1
		FFPLK0310	DFP Arm	P17	17	1
		FFPMA0520	DFP Roller	P17	18	1
		FFPMV0044	Polyslider	P17	19	1
		FFPXF21D80	Torque Limiter Ass'y	P17	20	1
		FFPFJ0033	Touch Ring	P17	21	1
		FFPKD12623	DFP Holder	P17	22	1
		FFPKD1272	DFP Stay	P17	23	1
		FFPLG1416	DFP Shaft	P17	24	1
		FFPLP09531	Pressure Spring	P17	25	1
		FFPXF11D80	Rear Frame, Bypass	P17	26	1
		FFPXF11D81	Rear Frame, Bypass (for North America)	P17	26	1
		FFPMF09591	Gear, Idle 39T/26T	P17	27	1
7713-01-97	BJ-3.5-W03	BJ-3.5-W04	Magnetic Clutch Ass'y (FP-7713)	P17	28	1
		BJ-3.5-W04	Magnetic Clutch 2 Ass'y (FP-7715)	P17	28	1
		FFPLP1058	Pressure Spring	P17	29	1
		FFPLQ0402	Cover Terminal	P17	30	1
		FFPHP06511	Seal 10	P17	31	1
		FFPKS1021	Plate, Anti-vibration	P17	32	1
		FFPKF1236	Stopper, DFP Roller Shaft	P17	33	1
		FFPKP00781	Pad 2	P17	34	2

Paper feed unit-1

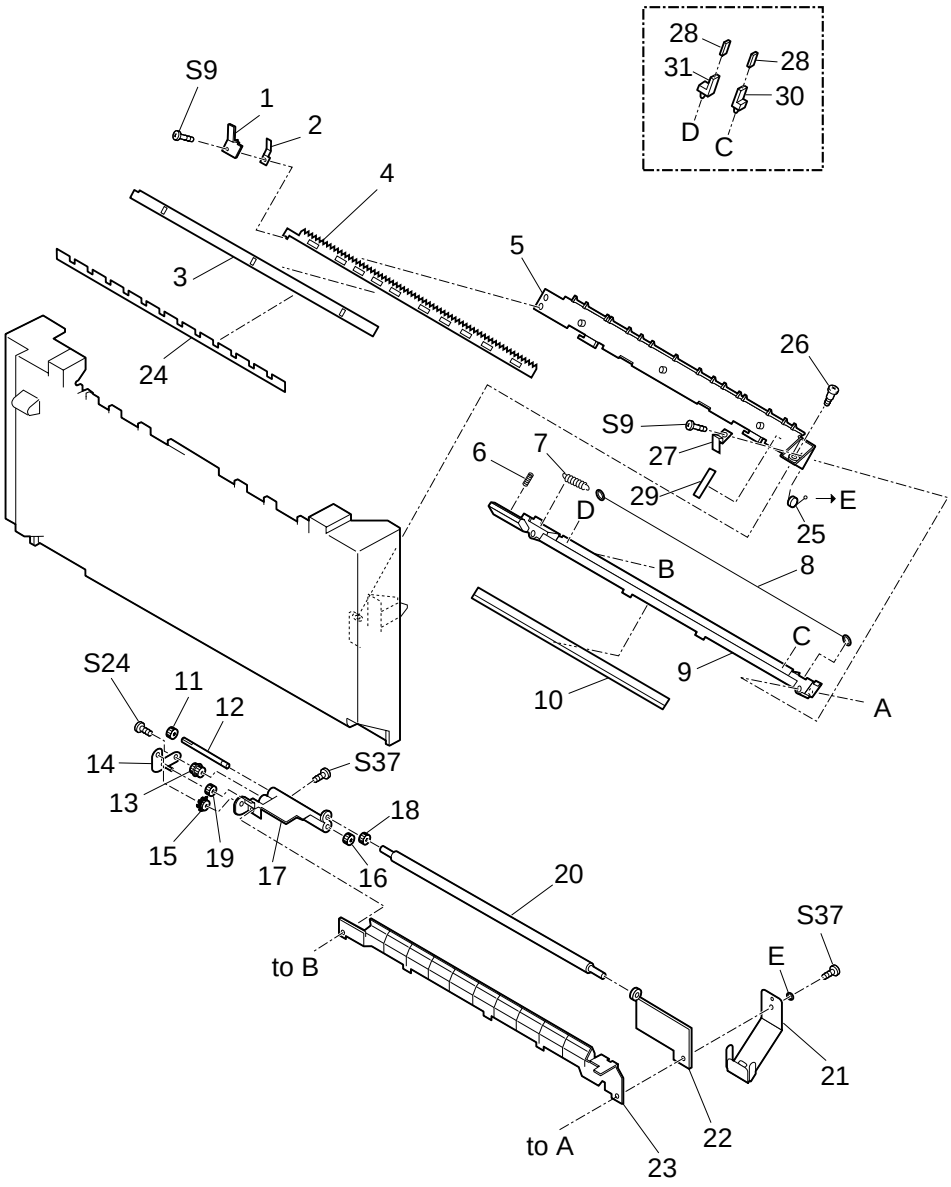


PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPUF01D61	Left Cover Ass'y (FP-7713 for North America)	P18	0	1
		FFPUF01D63	Left Cover Ass'y (FP-7713 for others)	P18	0	1
		FFPUF01D67	Left Cover Ass'y (FP-7113 for Taiwan)	P18	0	1
		FFPUF01G41	Left Cover Ass'y (FP-7715 for North America)	P18	0	1
		FFPUF01G43	Left Cover Ass'y (FP-7715 for others)	P18	0	1
		FFPUF01G47	Left Cover Ass'y (FP-7115 for Taiwan)	P18	0	1
		FFPDF0263	Ground Plate	P18	1	1
7713-01-97	BJ-3.5-W04	BJ-3.5-W03	Magnetic Clutch 2 Ass'y (FP-7715)	P18	2	1
		BJ-3.5-W03	Magnetic Clutch Ass'y (FP-7713)	P18	2	1
		FFPMQ0516	Bushing	P18	3	1
		UAMS05S2	Clamp	P18	4	5
		FFPKF13731	Clutch Stopper 1	P18	5	1
		FFPMF0787	Idle Gear	P18	6	1
		FFPKB08771	Rear Frame, Paper Feed	P18	7	1
		FFPKH0303	Insulation Spacer	P18	8	1
		ERZV10D751	ZNR	P18	9	1
		LWS1S	LWS	P18	10	2
		FFPJA0277	Harness Guide	P18	11	1
		FFPKU01631	Support	P18	12	1
		FFPKP00741	Cleaning Pad (FP-7713)	P18	13	1
		FFPKP0081	Cleaning Pad (FP-7713)	P18	13	1
		FFPWC1545	KB Harness (FP-7713)	P18	14	1
		FFPWC1572	KB Harness (FP-7715)	P18	14	1
		TLP1225	Sensor (FP-7713)	P18	15	1
		TLP1225	Sensor (FP-7715)	P18	15	2
		FFPKD12611	Roller Stay, Paper Feed	P18	16	1
		FFPFA0151	Shoulder Screw	P18	17	1
		FFPMF0965	Gear, DFP Drive 16T	P18	18	1
		FFPLR0257	Spring	P18	19	1
		FFPLG15731	Paper Feed Shaft 3	P18	20	1
		FFPMD0026	Boss	P18	21	1
		FFPLR02562	Spring	P18	22	1
		FFPFJ0033	Touch Ring	P18	23	1
		FFPKR16611	Bracket, Pick up Roller	P18	24	1
		FFPMF0960	Gear, Pick up Idle	P18	25	1
		FFPMA0521	Pick up Roller	P18	26	1
		FFPKS1020	Bracket, Paper Feed Roller	P18	27	1
		FFPLG1418	Pick up Roller Shaft	P18	28	1
		FFPKD12641	Finger Support	P18	29	1
		FFPKN03731	Cleaning Pad	P18	30	1
		FFPMQ0383	Bushing	P18	31	1
		XPJ2D10WV	Pin	P18	32	2
		FFPMF0958	Gear, Pick up Drive	P18	33	1
		FFPMA0518	Paper Feed Roller	P18	34	1
		FFPFJ0039	Touch Ring	P18	35	1
		FFPLK0312	Tray Arm 2 (except North America)	P18	36	1
		FFPLK03111	Tray Arm 1 (except North America)	P18	37	1
		FFPKB08732	Front Frame, Bypass	P18	38	1
		FFPNA05675	Left Cover	P18	39	1
		FFPMQ0400	Roller Clutch	P18	40	1
		FFPMV0004	Polyslider	P18	41	1
		FFPKP0081	Cleaning Pad	P18	42	1
		FFPLL05481	Sensor Lever (FP-7715)	P18	43	1

Fuser section



PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPMF0946	Gear, Exit Roller	P19	1	1
		FFPMQ0506	Bushing	P19	2	2
		FFPKF12202	Guide 1	P19	3	1
		FFPMA05151	Exit Roller 2	P19	4	4
		FFPLP09461	Roller Spring	P19	5	4
		FFPMA05142	Exit Roller	P19	6	1
		FFPLT0121	Holder, Exit Roller 2	P19	7	1
		FFPFA0138	Shoulder Screw	P19	8	5
		FFPNA05675	Left Cover	P19	9	1
		FFPMA0523	Pressure Roller	P19	10	1
		FFPMQ0520	Bearing	P19	11	2
		FFPMQ0518	Bearing Holder	P19	12	2
		FFPLP09551	Pressure Spring	P19	13	2
		FFPLP09471	Spring	P19	14	2
		FFPLF01763	Heat-insulating Cover	P19	15	1
		FFPDU0064	Discharge Brush	P19	16	1
		FFPLK0306	Sensor Arm	P19	17	1
		TLP1225	Sensor	P19	18	1
		FFPWC1536	SHPS Harness	P19	19	1
		FFPLR0252	Spring	P19	20	1
		FFPLP09432	Pressure Spring 1	P19	21	1
		FFPDF02572	Ground Terminal	P19	22	1
		FFPKE09783	Fuser Cover	P19	23	1
		FFPTE1677	Caution Label, High Temperature	P19	24	1
		FFPTE19342	Label, Paper Jam	P19	25	1
		FFPKM02785	Cleaning Pad	P19	26	1
		FFPDF0267	Bracket, Lamp Terminal 2	P19	27	1
		FFPDF0266	Electric Plate 2	P19	28	1
		FFPET0014	Thermostat	P19	29	1
		FFPLN0005	Finger Spring	P19	30	2
		FFPLK0336	Finger	P19	31	4
		FFPDF0265	Electric Plate 1	P19	32	1
		FFPWC1554	FU Harness	P19	33	1
		FFPDF0264	Bracket, Lamp Terminal 1	P19	34	1
		FFPKB087211	Fuser Frame	P19	35	1
		FFPBL0013	Thermistor	P19	36	1
		H12V1KWN1A	Lamp (for North America/Taiwan)	P19	37	1
		H22V1KWN1A	Lamp (except North America/Taiwan)	P19	37	1
		FFPMQ0523	Bearing	P19	38	1
		FFPMQ0524	Bushing	P19	39	1
		FFPMA05242	Heat Roller	P19	40	1
		FFPKF12311	Front Guide	P19	41	1
		FFPDF02682	Ground Plate	P19	42	1
		FFPMF09611	Gear, Heat Roller	P19	43	1
		FFPHK1006	Sheet	P19	44	2
		FFPKN0340	Paper Exit Rubber (for Taiwan/China)	P19	45	4
		FFPMQ0529	Bushing	P19	46	1
		FFPKF12502	Rib 1 (for Taiwan/China)	P19	47	1
		FFPKF12512	Rib 2 (for Taiwan/China)	P19	48	1
		FFPKD12982	Plate (for Taiwan/China)	P19	49	2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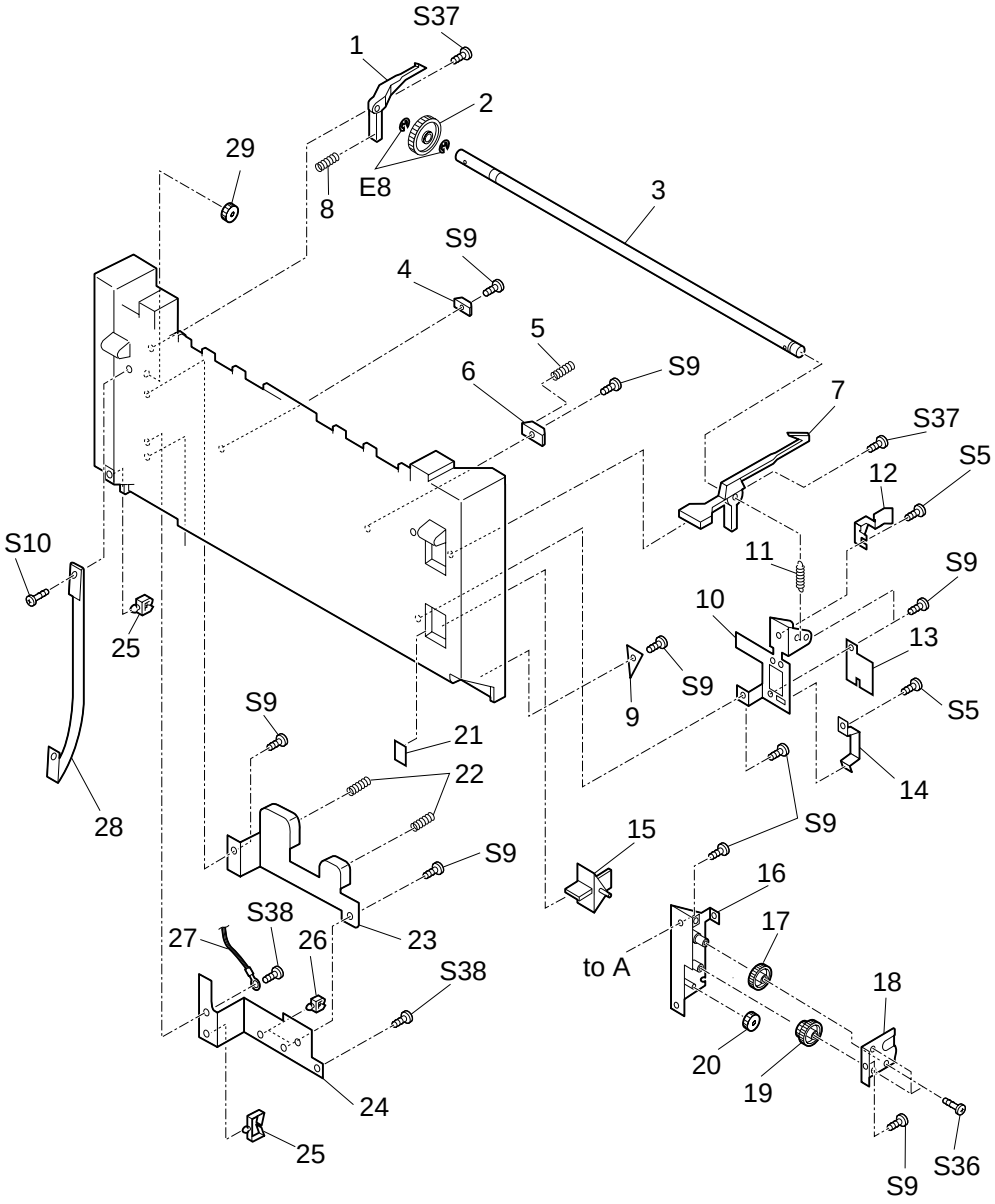
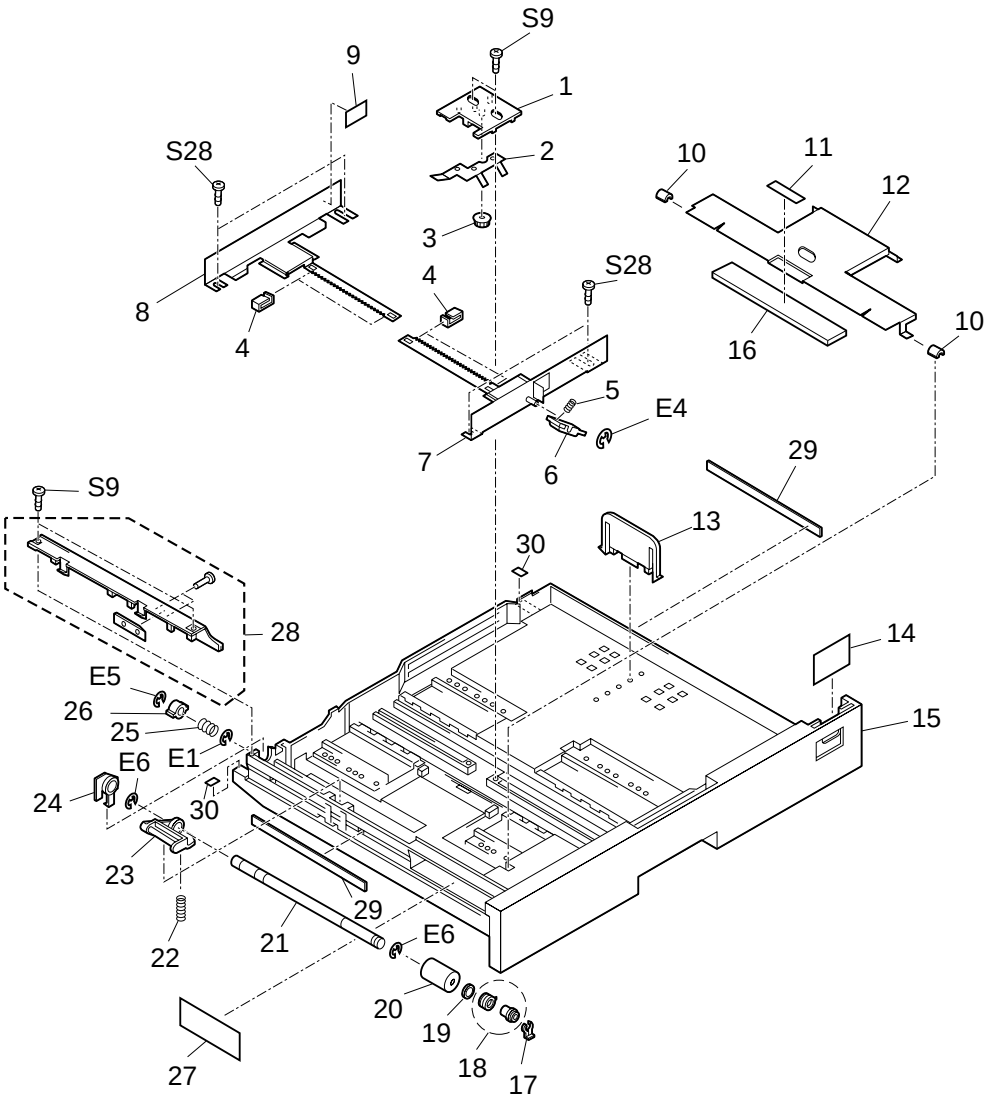
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPXF10D611	Corona No. 2/3 Ass'y	P20	0	1
		FFPXF10D67	Corona No. 2/3 Ass'y (for Taiwan)	P20	0	1
		FFPKD12561	Plate, Discharge Needle	P20	1	1
		FFPDF0256	Terminal 2	P20	2	1
		FFPHK0903	Mylar, Discharge Needle	P20	3	1
		FFPKS1000	Discharge Needle	P20	4	1
		FFPKD12556	Holder, Discharge Needle	P20	5	1
		FFPLP0944	Spring	P20	6	1
		FFPLP09451	Tension Spring	P20	7	1
		FFPEY00641	Corona Wire	P20	8	1
		FFPXF09D802	Corona No.2/3 Frame Ass'y (for Taiwan)	P20	9	1
		FFPXF09D803	Corona No.2/3 Frame Ass'y	P20	9	1
		FFPHK09091	Mylar	P20	10	1
		FFPMF0968	Gear 2	P20	11	1
		FFPLG1428	Gear Shaft	P20	12	1
		FFPMF0970	Gear 4	P20	13	1
		FFPKM02821	Gear Stopper	P20	14	1
		FFPMF0972	Gear 6	P20	15	1
		FFPMF09691	Gear 3	P20	16	1
		FFPKQ01652	Gear Case	P20	17	1
		FFPMF0967	Gear 1	P20	18	1
		FFPMF0971	Gear 5	P20	19	1
		FFPMA05252	Roller	P20	20	1
		FFPLQ0439	Earth Plate (for Taiwan)	P20	21	1
		FFPMQ05221	Roller Plate	P20	22	1
		FFPKF12192	Front Guide	P20	23	1
		FFPHK09241	Guide Mylar	P20	24	1
		FFPWL0007	ZNR Ass'y (except Taiwan)	P20	25	1
		FFPFA0113	Shoulder Screw	P20	26	1
		FFPLQ0443	Earth Plate	P20	27	1
		FFPKN0380	Rubber Anti-vibration (except Taiwan)	P20	28	2
		FFPHK1006	Sheet (except Taiwan)	P20	29	1
		FFPJA0313	Rubber Holder, Front (except Taiwan)	P20	30	1
		FFPJA0312	Rubber Holder, Rear (except Taiwan)	P20	31	1

Left cover ass'y



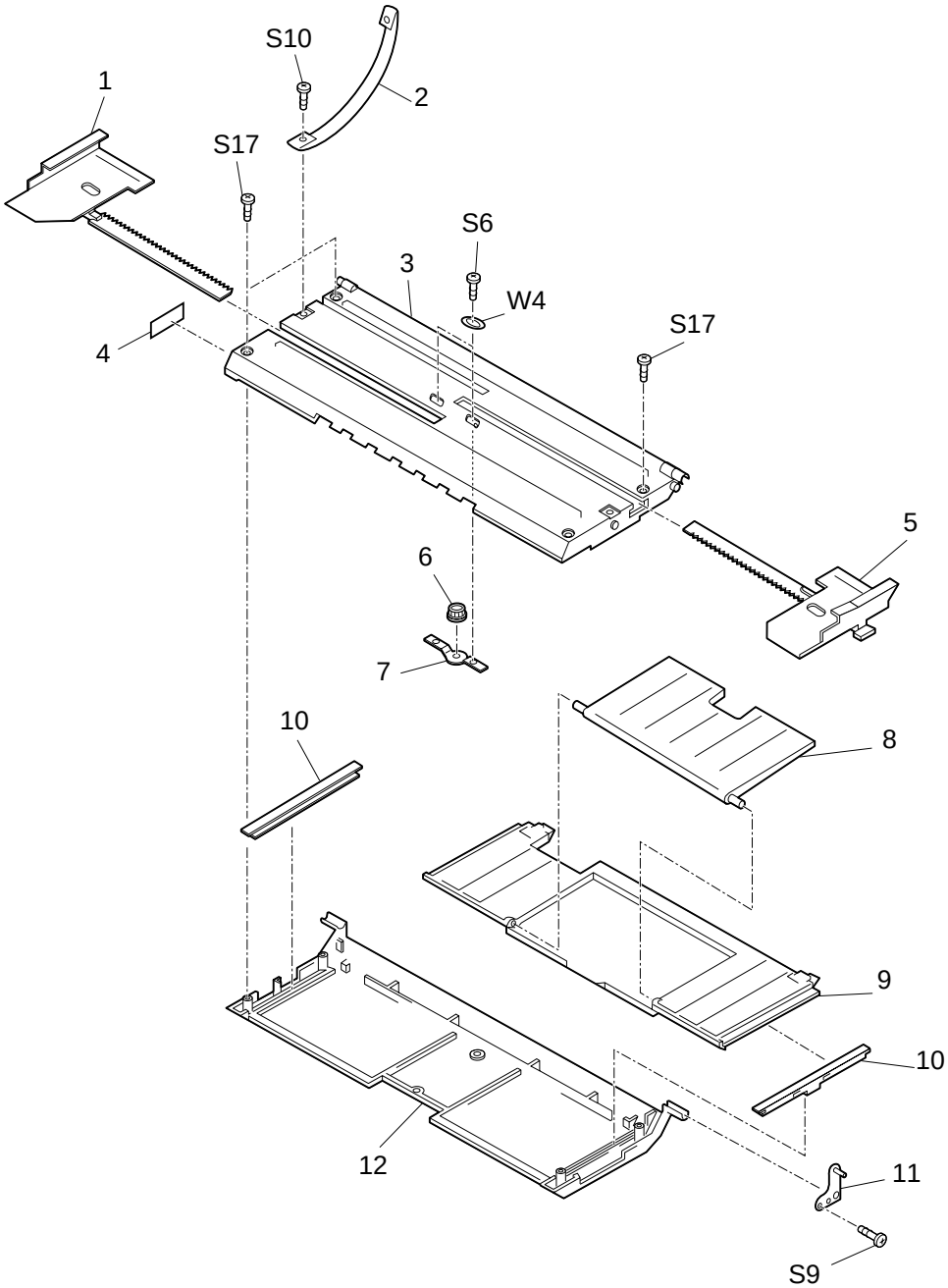
PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPLL05415	Latch 2	P21	1	1
		FFPMF0941	Gear, Fuser Idle	P21	2	1
		FFPLG1423	Shaft, Open/Close	P21	3	1
		FFPKA0150	Support 2	P21	4	1
		FFPLP09432	Pressure Spring 1	P21	5	1
		FFPKA0149	Support 1	P21	6	1
		FFPLL05402	Latch 1	P21	7	1
		FFPLP0956	Spring	P21	8	1
		FFPLQ03981	Pressure Spring	P21	9	1
		FFPLK03031	Bracket, Open/Close Arm Front	P21	10	1
		FFPLP0957	Ground Spring	P21	11	1
		FFPKE0983	Safety Cover	P21	12	1
		FFPKK0053	Harness Cover	P21	13	1
		FFPLQ0393	Spring	P21	14	1
		FFPLA0089	Switch Knob	P21	15	1
		FFPKR16572	Bracket 2	P21	16	1
		FFPMF0943	Gear, Idle	P21	17	1
		FFPKR1659	Hold Plate	P21	18	1
		FFPMF07501	Gear, Idle 33T/16T	P21	19	1
		FFPMF0883	Gear, Idle 2	P21	20	1
		FFPTE1950	Label, Power Indication	P21	21	1
		FFPLP0944	Spring	P21	22	2
		FFPDA00294	Base	P21	23	1
		FFPDF02581	Ground Plate	P21	24	1
		LWS1S	LWS	P21	25	2
		UAMS05S2	Clamp	P21	26	2
		FFPWC1555	KBE Harness	P21	27	1
		FFPKM02791	Tray Belt	P21	28	1
		FFPMF09401	Gear, Idle 4	P21	29	1

250 sheet paper tray



PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPUC01D60	Cassette Ass'y (FP-7713 for Taiwan)	P22	0	1
		FFPUC01D61	Cassette Ass'y (FP-7713 for North America)	P22	0	1
		FFPUC01D63	Cassette Ass'y (FP-7713 for others)	P22	0	1
		FFPUC01G40	Cassette Ass'y (FP-7715/FA-DS16 for Taiwan)	P22	0	1
		FFPUC01G41	Cassette Ass'y (FP-7715/FA-DS16 for North America)	P22	0	1
		FFPUC01G43	Cassette Ass'y (FP-7715/FA-DS16 for others)	P22	0	1
		FFPKS10041	Adjusting Plate	P22	1	1
		FFPLQ03961	Spring	P22	2	1
		FFPMF0829	Pinion Gear	P22	3	1
		FFPKM0277	Rack Guide	P22	4	4
		FFPLP09541	Release Spring	P22	5	1
		FFPLL05371	Release Lever	P22	6	1
		FFPQG00792	Paper Guide, Front	P22	7	1
		FFPQG00731	Paper Guide A, Rear	P22	8	1
		FFPTE1949	Label, Paper Overfill	P22	9	1
		FFPFG0463	Fulcrum Pin	P22	10	2
		FFPKM0293	Pad	P22	11	1
		FFPQG00751	Bottom Plate	P22	12	1
		FFPQG00781	Paper Guide, Rear	P22	13	1
		FFPPA0417	Paper Size Plate (for Taiwan)	P22	14	1
		FFPPA0418	Paper Size Plate (for North America)	P22	14	1
		FFPPA0419	Paper Size Plate (Others)	P22	14	1
		FFPQA014113	Main Frame	P22	15	1
		FFPHL0013	Cushion	P22	16	1
		FFPFJ0033	Touch Ring	P22	17	1
		FFPXC07D80	Cassette Boss Ass'y	P22	18	1
		FFPMV0044	Polyslider	P22	19	1
		FFPMA0517	DFP Roller	P22	20	1
		FFPLG14153	DFP Roller Shaft	P22	21	1
		FFPLP09514	Pressure Spring	P22	22	1
		FFPLK03081	DFP Arm	P22	23	1
		FFPMQ05141	Bushing	P22	24	1
		FFPLP0871	Pressure Spring	P22	25	1
		FFPHQ0046	Bushing	P22	26	1
		FFPKF1246	Paper Guide 5 (FP-7715)	P22	27	1
		FFPXC06D802	DFP Guide Plate Ass'y	P22	28	1
		FFPHK0930	Slide Sheet 2	P22	29	2
		FFPKM0281	Slider	P22	30	2

Sheet bypass tray



PCN	Part No. Original	Up-date	Description	Page No.	Ref. No.	Q'ty Per Unit
		FFPXF03D60	Sheet Bypass Ass'y	P23	0	1
		FFPQG0077	Paper Guide B, Rear	P23	1	1
		FFPKM02791	Tray Belt	P23	2	1
		FFPQB00401	Tray (1), Sheet Bypass	P23	3	1
		FFPKE0891	Stopper Cover	P23	4	1
		FFPQG0076	Paper Guide B, Front	P23	5	1
		FFPMF0829	Pinion Gear	P23	6	1
		FFPKS10081	Adjusting Plate	P23	7	1
		FFPQB00421	Tray B, Sheet Bypass	P23	8	1
		FFPQB0041	Tray A, Sheet Bypass	P23	9	1
		FFPKF1230	Rail, Bypass Tray	P23	10	2
		FFPKS1012	Plate	P23	11	1
		FFPKE0975	Tray Cover, Bypass	P23	12	1

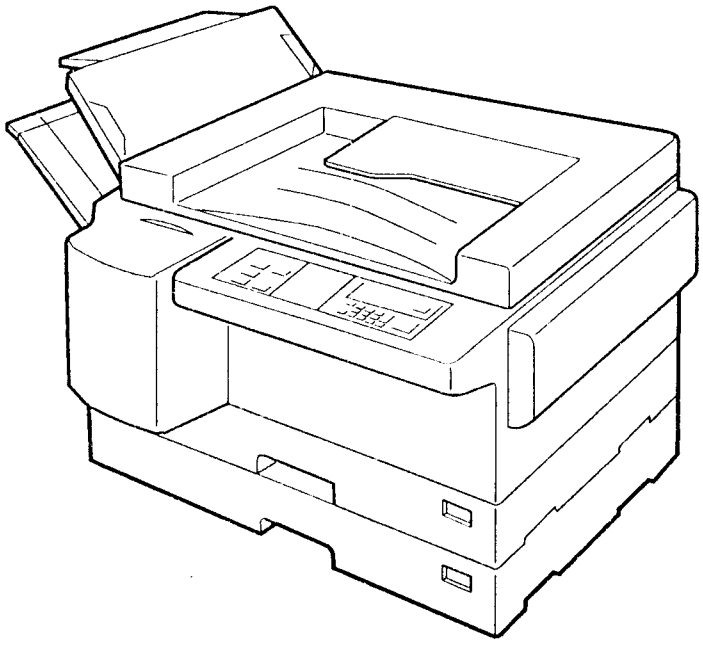
81127

ORDER NO. OED9709361C2

Serviceanleitung

Normalpapierkopierer

FP-7713
FP-7715



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Hinweise!

In diesem ergänzenden Handbuch sind alle neuen Funktionen des FP-7713/7715 erklärt.

Alle Funktionen die bereits in den Handbüchern FP-7113, FP-7115 erklärt oder unverändert sind, werden in diesem Handbuch nicht beschreiben.

Für diese Funktionen benutzen Sie bitte die Handbücher FP-7113, FP-7115.

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Vorsicht
Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

1. Technische Daten

1. Typ:	Tischgerät		
2. Kopierverfahren:	Elektrostatische Fotomethode		
3. Entwicklungsverfahren:	Zweikomponenten-Magnetbürste		
4. Maximales Originalformat:	A3 (297 x 420 mm)		
5. Kopiergeschwindigkeit:		<FP-7713>	<FP-7715>
(Kopien/Minute)	A3:	7	8
	B4/FLS:	8	9
	A4:	13	15
	A4R:	10	11
	A5:	13	15
6. Erstkopierzeit:	6,5 Sekunden: (A4) (ohne Automatik)		
	10,5 Sekunden: (A4) (Automatik)		
7. Abbildungsmaßstab:	Vergrößerung (fest):		
	1:1,41, 1:1,22, 1:1,15		
	1:0,87, 1:0,82, 1:0,71		
	Zoom: 1,41–0,65 (1%-Schritt)		
8. Kopieformat:	A3	: 297 x 420 mm	
	B4	: 257 x 364 mm	
	Foolscap	: 8,5 x 13 in, 8 x 13 in	
	A4	: 210 x 297 mm	
	A5	: 148 x 210 mm	

9. Papierfassungsvermögen: 250 Blatt pro Papierfach (Fronteinzug) +50 Blatt Multiformat-Einzelblatteinzug
10. Papiereinzug: Wahl mit Tastendruck zwischen automatischem Papierfach und Einzelblatteinzug
11. Auslauffachkapazität: 100 Blatt (80 g/m²: B4/A4/A5)
    50 Blatt (80 g/m²: A3)
12. Papiergewicht: 75 bis 90 g/m² (Kassette)
    60 bis 130 g/m² (Einzelblatteinzug)
13. Kopienzahl: 1-99, automatische Rückstellung auf 1
14. Fixiersystem: Hitze und Druck
15. Fotorezeptor: Organischer Fotoleiter (OPC)
16. Belichtungsregelung: 7 Schritte digital + Foto/Auto-Taste
17. Aufwärmzeit: Ca. 40 Sekunden (FP-7715)/37 Sekunden (FP-7713)
18. Optiksystem: Herkömmliche interne Abtastung
19. Fehleinzuganzeige: LED-Anzeige
20. Tonerzufuhr: Automatisch
21. Leistungsaufnahme:
    Normalbetrieb : Ca.100 Wh
    Standby-Betrieb : Ca. 45 Wh
    Kondensations-Verhinderungsbetrieb : Ca. 15 Wh
    Stromsparbetrieb : Ca. 9 Wh
22. Betriebsstrom: 220-240 V ±10% Wechselstrom, 6,5A, 50 Hz
23. Abmessungen (BxTxH): 629 x 631 x 347 mm (FP-7715)
    629 x 608 x 347 mm (FP-7713)
24. Gewicht: Ca. 33 kg
25. Umgebungsbedingungen:
    Temperatur : 10°C bis 30°C
    Luftfeuchtigkeit : 30% bis 80%
    Geräusch = Standby : 35 dB
    = Betrieb : 49 dB
    Hitzeerzeugung = Warten : Ca. 100 Wh
    = Betrieb : Ca. 250 Wh
    Ozonerzeugung : Unter 0,1 ppm
26. Zubehör: Auslauffach
    Dokumententasche
    Entwickler (ausgenommen Nordamerika-Version)

* Änderungen bei den technischen Daten ohne vorherige Ankündigung bleiben vorbehalten.

2. Liste der geänderten und der neuen Funktionen

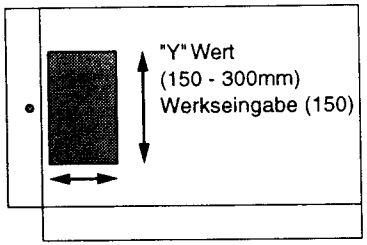
Inhaltsverzeichnis	FP-7113	FP-7713	FP-7115	FP-7715
1. Neue Funktionen				
(1) "Sky Shot" Modus	Nein	Ja	Nein	Ja
(2) Neuversuch-Steuerung für Papierfehleinzug	Nein	Ja	Nein	Ja
2. Geänderte Funktionen				
(1) Papierformat Auswahl (Magazin)	Nein	Nein	Automatische	Nein
(2) Papierformat Eingabe (Magazin) (Papierformateinstellungs-Aufkleber)	F5-83	F5-83	F-5-83, 84	"Key-in" und F-5-83, 84
(3) Service-Betriebsarten				
• F5-34 Hintergrund für die Trommel Kompensation, ändert das Max.	1:19 Schritte 2:15 Schritte 3:13 Schritte	1:38 Schritte 2:30 Schritte 3:26 Schritte	1:19 Schritte 2:15 Schritte 3:13 Schritte	1:38 Schritte 2:30 Schritte 3:26 Schritte
• F5-89 Fehlermeldung für den Optik-Lüftermotor 2 0:Erkennung 1:Keine Erkennung	Nein	Neue	Nein	Neue

3. Neue Funktionen

3-1. "Sky Shot" Modus

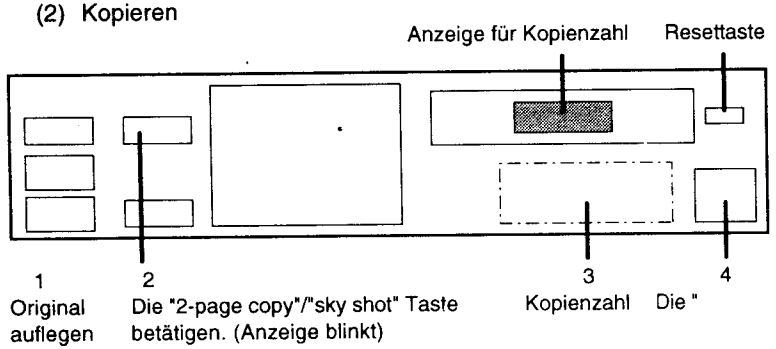
Wenn Scheckformate oder andere spezielle Originalformate kopiert werden, ist dieses möglich ohne schwarze Ränder zu bekommen.

(1) Eingabe der Scheckformatgröße. (Scheck)



① Die "SKY-SHOT" Taste drücken, und gedrückt halten. (länger als 3 Sekunden)
② Der "Y" Wert erscheint in der Kopienanzeige. (3 Sekunden)
③ Den "Y" Wert mit den Zoomtasten "up/down" verändern. (10mm Schritte)
④ Die "Print" Taste betätigen.
⑤ Der "X" Wert erscheint in der Kopienanzeige. (3 Sekunden)
⑥ Den "X" Wert mit den Zoomtasten "up/down" verändern. (5mm Schritte)
⑦ Die "Print" Taste betätigen.

(2) Kopieren



(3) Den "Sky Shot" Modus ausschalten:
FP-7113 : Die "2-page copy"/"Sky shot" Taste betätigen. (zweimal)
FP-7715 : Die "Reset" Taste betätigen.

3-2. Neuversuch-Steuerung für Papierfehleinzug

Das Kopierpapier sollte den Papierwegsensor innerhalb eine vorbestimmten Zeit nach Einschalten der Papiereinzugskupplung passieren. Um fehlerhaften Einzug aufgrund einer schwach greifenden Papiereinzugswalze zu vermeiden, schaltet sich die Papiereinzugskupplung wieder ein (Neuversuch).

Wenn das Papier die Einzugwalze nach zwei Neuversuchen nicht innerhalb einer vorbestimmten Zeit erreicht, zeigt das Display einen Papierstau an.

3-3. Papierformateinstellung (nur bei der FP-7715)

Das Papiermagazin ist vom Werk auf A3 eingestellt.

(1) Änderung der Papierformateinstellung.
① Die "Paper Tray" Taste betätigen und gedrückt halten, dann die "2-page copy"/"Sky Shot" Taste betätigen.
② Das Papiermagazin mit der "Paper Tray" Taste anwählen. (nur bei der FP-7715 mit FA-DS16)
③ Das Papierformat mit den Zifferntasten auswählen.
1: A3 2: B4 3: A4
4: A4R 5: A5
④ Die "Print" Taste betätigen.

(2) Das gewünschte Magazin herrausziehen.
Die Papierführungen auf das gewünschte Format einstellen.

(3) Die Papierformatanzeige einstellen.

Hinweis: Wenn der Kunde die Möglichkeit für die Änderung des Papierformates nicht benötigt, stellen Sie F5-87 auf "1" nicht einstellbar. Werkseinstellung ist "0" einstellbar.

4. Wartungstabelle

Gegenstand / Wartung		Teilenummer	Anzahl pro Einheit	(× 1000) 30	60	90	120
Einzelblatteinzug	Papiereinzugwalze	FFPMA0518	1	○	×	○	× (×)
	Separationswalze	FFPMA0520	1	×	×	×	× (×) (×)
	Aufnehmerwalze	FFPMA0521	1	×	×	×	× (×) (×)
	Drehmomentbegrenzer	FFPXF21D80	1	×	×	×	× (×) (×)
Papiereinzugeinheit	Papiereinzugwalze	FFPMA05161	1	○	×	○	× (×)
	Separationswalze	FFPMA0517	1	×	×	×	× (×) (×)
	Registrierwalze	FFPMA05136	1	○	○	○	○
	Registrierwalze	FFPMA0598	1	○	○	○	○
	Reinigungspolster-Baugruppe	FFPXF18D804	1	○	○	○	○
	Drehmomentbegrenzer	FFPXC07D80	1	×	×	×	× (×) (×)
Entwicklereinheit	Koronadraht	FFPEY00641	1		×		×
	Korona-Baugruppe Nr. 1	FFPXG07D801	1	○	○	○	○
	Entwickler	FQ-ZF15	1		×		×
	Trommel	FQ-HF13	1	×	×	×	×
	Abfalltonerbehälter	FFPQA0143	1	Bei 5.000 Kopien austauschen. (Für Anwender-Austausch)			
	Reinigungsleiste	FFPHK09051	1		×		×

○ : Reinigen × : Austauschen
*( ) : Austausch-Zyklus basiert auf niedriger Verwendung.

*: Das Service Personal kann je nach Papierdurchsatz den Zeitplan für den Austausch der Wartungsteile an den jeweiligen Papiereinzügen frei bestimmen. Wir meinen, daß dadurch effektivere Kopiererwartungen und Kosteneffizienz für den Anwender erreicht werden.
Beim Reinigen der Spiegel darf der Lampenschlitten und der Spiegel-schlitten nicht direkt mit der Hand bewegt werden. Benutzen Sie bitte die Achse des Lampenschlittens, um die Position zu verändern.

Gegenstand / Wartung		Teilenummer	Anzahl pro Einheit	(× 1000) 30	60	90	120
Fixierstation	Separationsfinger oben	FFPLK0336	4	○	○	○	×
	Thermistor	FFPBL0013	1	○	○	○	×
	Heizstrahler	H12V1KWN1A (for 120V ver.) H22V1KWN1A (for 220/240V ver.)	1				×
	Reinigungspolster	FFPKM02785	1	Bei 5.000 Kopien austauschen. (Für Anwender-Austausch)			
	Heizwalze	FFPMA05242	1	○	×	○	×
	Andruckwalze	FFPMA0523	1	○	×	○	×
	Papierauslaufsensor	FFPMA05142	1	○ (Masseabdeckungs-Seite)	○	○	○
Optiksystem	Belichtungslampe	E08V025WN2A (for 120V ver.) E16V025WN2A (for 220/240V ver.)	1				×
	Spiegel Nr. 1	FFPGC0179	1				
	Spiegel Nr. 2	FFPGC0180	1				
	Spiegel Nr. 3	FFPGC0181	1				
	Spiegel Nr. 4	FFPGC0174	1	○	○	○	○
	Spiegel Nr. 5	FFPGC0182	1				
	Spiegel Nr. 6	FFPGC0183	1				
	Linse	FFPGA0042	1				
Hauptgerät	Filter	FFPHJ00341	1		○		○
	Ozonfilter	FFPHJ00351	1		×		×
	Filter	FFPGB0021	1		○		○
	Koronadraht	FFPEY00641	1		×		×
	Korona Nr. 2/3 Baugruppe	FFPXF10D803	1	○	○	○	×
	Schlitzglas	FFPGC0184	1	○	○	○	○
	Auflageglas	FFPGC0154	1	○	○	○	○
	Auflagegummi	FFPNN00362	1	○	○	○	○
	Riemenverschluß	FFPJC0260	1				×

○ : Reinigen × : Austauschen

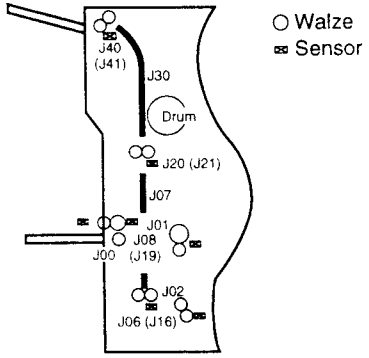
Wartungstabelle

5. Fehlersuche

5-1. Bedienungsfehler

Fehler Code	Störung	Ursache/Prüfung
o	Stromspar und Kondensationsverhinderung • Zum Löschen von "0" drücken Sie eine der Zifferntasten.	1. Bei Abschluß des Kopiervorgangs nach Verstreichen von F5-C13-eingabe.
O	Bereitschaftsbetrieb • Die Ziffernanzeige zeigt "0", und alle anderen Anzeigen sind ausgeschaltet. • Zum Aufheben des STAND-BY-Betriebs drücken Sie eine Zifferntaste.	1. Bei Abschluß des Kopiervorgangs nach Verstreichen von 2 Minuten (Eingabe F5-C03-1) oder 4 Minuten (Eingabe F5-C03-2) wird "0" angezeigt.
PXX	Papier nachfüllen	1. Diese Anzeige blinkt, wenn kein Papier im Fach ist. 2. Bei Verwendung von ADF. • Originalgroßes Papier ist nicht im Kopierer eingelegt.
U6	Papiereinzugklappen-Fehlfunktion (Papiereinzugtisch)	1. Die Papiereinzugklappe ist offen.
U10	U10 ADF-Fehlfunktion	1. Der ADF wird nach dem Einlegen des Originals (der Originale) geöffnet.
U13	Tonerstanderkennung • Abschaltung der U 13 Anzeige von F5-C63-0: Beliebige Taste drücken. Eingabe F5-C63-1: Papierfach-Taste und die Zifferntaste "10" drücken.	1. Wenn der Tonerbehälter leer ist. 2. Tonerdichtensensor ist defekt. 3. Tonerzuführmechanismus ist defekt. 4. CPU-Leiterplatte ist defekt.
U16	Fehlfunktion der Entwicklereinheit • Wenn in der Service-Betriebsart die Entwicklereinheit nicht installiert ist erscheint "UFX" Ziffernanzeige.	1. Die Entwicklereinheit ist nicht korrekt installiert. 2. Der Stecker für die Entwicklereinheit ist nicht korrekt eingesteckt. 3. Der Stecker für die Entwicklereinheit ist defekt. 4. Die CPU-Leiterplatte ist defekt.

5-2. Papierstau



○ Walze
▭ Sensor

Papierstau-Lese-code (F8-C06 verwendet)	Zustand
J00 (FP-7715)	Papierstau (Bypass) • Wenn der Synchronwalzensensor nicht Papier innerhalb eines vorgegebenen Zeitraums nach dem Beginn des Drehens der Bypasspapierzufuhrwalze erkennt.
J01 (FP-7715)	Papierstau (Kopierer-Papierfach) • Wenn der Synchronwalzensensor nicht Papier innerhalb eines vorgegebenen Zeitraums nach dem Beginn des Drehens der Papierzufuhrwalze erkennt.
J02 (FP-7715)	Papierstau (Papiereinzugtisch) • Wenn der Registrierwalzensensor des Papiereinzugtisches nicht Papier innerhalb eines vorgegebenen Zeitraums nach dem Beginn des Drehens der Papierzufuhrwalze erkennt.
J06 (FP-7715)	Papierstau (Papiereinzugtisch) • Wenn die Hinterkante des Papiers nicht innerhalb einer vorgegebenen Zeit nach dem Erkennen der Vorderkante des Papiers erkannt wird.
J16 (FP-7715)	Papierstau (Papiereinzugtisch) • Wenn die Registrierwalze des Papiereinzugtisches Papier erkennt, wenn der Netzschalter auf EIN geschaltet wird.
J07	Papierstau (Bypass) • Der Synchronwalzensensor erkennt das Papier nicht innerhalb einer vorbestimmten Zeit nach der Bypass-Papierwegsensor erkennt das Papier.

Papierstau-Lese-code (F8-C06 verwendet)	Zustand
J08	• Die Papierhinterkante wird innerhalb einer vorbestimmten Zeit nach Registrierung der Papiervorderkante durch die Bypass-Papierwegsensor nicht registriert.
J19	• Der Bypass-Papierwegsensor erkennt Papier beim Einschalten der Netzversorgung.
J20	• Die Papierhinterkante wird innerhalb einer vorbestimmten Zeit nach Registrierung der Papier-vorderkante durch die Synchronwalze nicht registriert.
J21	• Der Synchronwalzensensor erkennt Papier bei Einschalten der Netzversorgung.
J30	Papierstau (zwischen Synchronwalzensensor und Papierauslaufsensor) • Wenn der Papierauslaufsensor nicht innerhalb einer vorbestimmten Zeit nach einsetzender Drehung der Synchronwalze kein Papier erkennt.
J40	• Die Papierhinterkante wird nicht innerhalb einer vorbestimmten Zeit nach Erkennen der Papiervorderkante durch den Papierauslaufsensor erkannt.
J41	• Der Papierauslaufsensor erkennt Papier bei Einschalten der Netzversorgung.
J70 (FP-7715)	ADF-Stau (ADF) • Wenn ein Original im ADF gestaut ist.

5-3. Maschinenfehler

E1: Fehler in der Optikeinheit

Code	Funktion/Ursache
01	Abtastfunktion der Vollschritteinheit • Wenn die Vollschritteinheit nicht den Grundstellungssensor der Vollschritteinheit innerhalb einer vorbestimmten Zeit auslöst.
21	Abtastfunktion der Halbschritteinheit • Wenn die Halbschritteinheit nicht den Grundstellungssensor der Halbschritteinheit innerhalb einer verbestimmten Zeit auslöst.
22	Abtastfunktion der Spiegeleinheit Nr. 5/6 • Wenn die Spiegeleinheit Nr. 5/6 nicht den Grundstellungssensor der Spiegeleinheit Nr. 5/6 innerhalb einer vorbestimmten Zeit auslöst.
23	Falsche Eingabe von F8-C02 (Meßwerteingabe zur Einstellung der Originalregistrierung)
32	Automatische Erkennung des Originalhelligkeitsgrads • Wenn das Auto-Original-helligkeit-Signal nicht erkannt wird oder wenn die Auto-Originalhelligkeit nicht gemessen werden kann.
40	Optikkühlgebläse (A)-Motor
41	Optikkühlgebläse (B)-Motor

E2: Fehler in der Papiereinzugstation

Code	Funktion/Ursache
20	Bypass-Papierwegsensor • Wenn der Sensor kein EIN/AUS Signal erkennt.

E3: Fehler in der Entwicklereinheit oder Tonereinheit

Code	Funktion/Ursache
03	Tonerkonzentrantions-Sensorverstärkung
10	Hochspannungsübertschlag
20	Hauptmotordrehung
22	Schwärzungsverhinderung-Film
30	Entladelampe

E4: Fehler in der Heizung

Code	Funktion/Ursache
01	Fixierstation-Warmlaufbetrieb • Die Fixiertemperatur erreicht den vorgeschriebenen Wert nicht innerhalb einer vorbestimmten Zeit.
10	Fixierkühlegebläsemotor • Wenn der Motor dreht, wird kein Motorsignal EIN/AUS erkannt, oder das Motorsignal EIN/AUS wird bei gestopptem Motor erkannt.

E5: Systemfehler (+24V / +10V)

Code	Funktion/Ursache
01	Vp-Leitung (+24V)
04	Vp-Leitung (+10V)
35	E-Prom • Übertragung und Empfang-Leitung (Daten, Latch, Stark) ist defekt.

6. Service-Betriebsarten

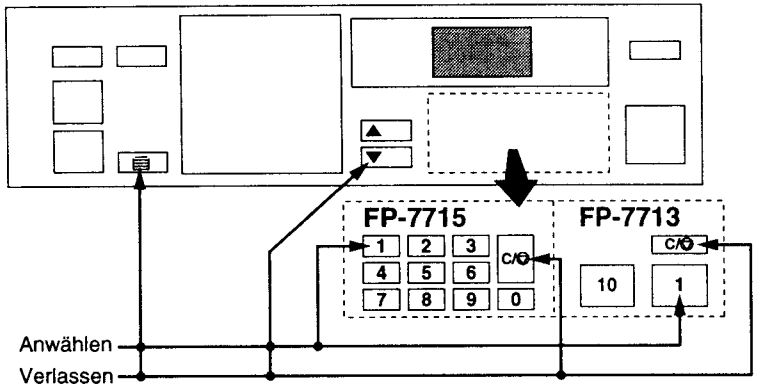
Die Servicebetriebsarten dienen dazu, Fehlfunktionen präzise und sicher aufzufinden, Das Bedienfeld zeigt das Auftreten jeglicher Störungen in den einzelnen Gerätesektionen an. Für eine Diagnose der Fehlfunktionen kann jede Gerätesektion einzeln betrieben werden. Darüber hinaus dienen die Service-Betriebsarten zur Änderung von gespeicherten Parametern.

Anwählen : Die Tasten PAPER TAY, ZOOM DOWN und MULTI-COPY 1 (FP-7715)/1 Zifferntaste (FP-7713) drücken.
"Zoom Down" und Zifferntaste "1".

Verlassen : Durch gleichzeitiges Drücken der Tastenkombination "Papierformat", "Zoom Down" und "Lösch/Stop".

Hinweis:
- Bei anormalem Betriebszustand erscheint F4 in der Ziffernanzeige.
- Wird der Kopierer nach der Wartung in der Betriebsart "F" aus-und später wieder eingeschaltet, startet dieser wieder in der Betriebsart "F". Zum Abschalten der Betriebsart "F" muß das Freigabeprogramm verwendet werden.
- Wenn die Entwicklereinheit nicht installiert ist erscheing "UFX" in der Ziffernanzeige (X bedeutet Service Betriebsart).

Vorsicht: Netzspannung Tropenheizung bleibt eingeschaltet, auch wenn das Gerät nicht arbeitet. Immer das Gerät vom Netz trennen (Steckdose), bevor Wartungs-oder Montagearbeiten vorgenommen werden.



Funktionen der Servicebetriebsart:

Wartungs-modus	Gegenstand	Funktion
F1	Anzeigenüberprüfung	Anzeigen- und Displayprüfung.
F2	Einzelblattkopierbetrieb	Für Einzelkopiervorgang.
F3	Fortlaufender Kopierbetrieb	Für Mehrfachkopiervorgang.
F4	Eingang/Ausgang-Prüfung	Prüfung der richtigen Funktion von Eingang/ Ausgang (Wahl durch Codenummer).
F5	Kopierer-Funktions-programmierungen	Einstellung der verschiedenen Funktionen (gewählt durch Codenummern) kann geändert werden.
F6	Einstellung und Programmierungen	Verschiedene Einstellungen (gewählt durch Codenummern) können geändert werden.
F7	Programmierung des Elektronikzählers	Lesen oder Rückstellen des elektronischen Zählwerks.
F8	Kopierer-Betriebs-einstellung	Grundeinstellungen (durch Codenummern gewählt).

Hinweis: Das Speicherdatenblatt für F5 und F6 und die RAM-Informationen sind innen an der rechte Abdeckung befestigt.

Eingang/Ausgang-Prüfung in der Betriebsart F4

Ausgangsprüfung

Vor der Ausgangsprüfung den Klappenschalter einschalten.

Code	Gegenstand	Funktion	Bemerkungen
20	Fixierstationskühlgebläse	Das Gebläse wird durch Drücken der Kopiertaste eingeschaltet.	Sichtprüfung • Die Lösch/Stop-Taste zum Rückstellen drücken.
21	Optikkühlgebläsemotor (A) und (B)		
22	Vollschritteinheitmagnet	Der Magnet wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	Sichtprüfung
23	Halbschritteinheitmagnet		
25	Belichtungslampe • Um Beschädigungen der Trommel zu verhindern, sollte bei dieser Prüfung die Entwicklereinheit ausgebaut werden. • Um zu starke Erwärmung zu vermeiden, diesen Vorgang nicht zu häufig ausführen.	Die Belichtungslampe wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	

Code	Item	Function	Remarks
26	Hauptmotor (Entladungslampe, Entwicklerbias und Fixerstationskühlgebläse)	Der Motor wird bei Drücken der Kopiertaste eingeschaltet.	Sichtprüfung • Zum Rückstellen die Lösch/Stop-Taste drücken.
27	+24V eingeschaltet.	24-V-Spannung wird durch Drücken der Kopiertaste erzeugt. **Hinweis:** Meßgerät zur Überprüfung zwischen VP und GND an der CPU-Leiterplatte anschließen.	
28	Papiereinzugwalzen-kupplung	Die Kupplung wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	Sichtprüfung
29	Bypasskupplung	Bei Drücken der Kopiertaste bleiben CN8-7 und PGND eingeschaltet (+24V ist eingeschaltet).	
30	Synchronwalzenkupplung	Bei Drücken der Kopiertaste bleiben CN8-1 und PGND eingeschaltet (+24V ist eingeschaltet).	
31	Gesamtzähler	Der Gesamtzähler beginnt bei Drücken der Kopiertaste zu zählen.	
32	Heizstrahler	Der Heizstrahler wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	
33	Papiereinzugwalzenkupplung (Papiereinzugtisch) (FP-7715)	Die Papiereinzugwalzenkupplung schaltet 2 Sekunden lang EIN, wenn die Kopiertaste gedrückt wird.	Sichtprüfung. • Die Taste CLEAR/ STOP zum Rückstellen drücken.
34	Registrierwalzenkupplung (Papiereinzugtisch) (FP-7715)	Die Registrierwalzenkupplung schaltet 2 Sekunden lang EIN, wenn die Kopiertaste gedrückt wird.	
35	ADF-Hauptmotor (Vorwärtsdrehung) (FP-7715)	Der ADF-Hauptmotor dreht vorwärts, wenn die Kopiertaste gedrückt wird.	
36	ADF-Hauptmotor (Rückwärtsdrehung) (FP-7715)	Der ADF-Hauptmotor dreht rückwärts, wenn die Kopiertaste gedrückt wird.	
37	ADF-Papiereinzugmagnet (FP-7715)	Der Magnet wird angesteuert, wenn die Kopiertaste gedrückt wird.	

Kopierer-Funktionsprogrammierung in der Betriebsart F5

	Code	Gegenstand	Funktion	(Werkseitige Einstellung)
System	00	Ländermodell **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Japan-Modell 1: US-Modell 2: Europa-Modell	2
	01	Gewünschte Frequenz **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: 50Hz 1: 60Hz	0
	02	Automatische Rückstellung **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Nicht vorhanden 1: 30 Sekunden 2: 1 Minuten 3: 2 Minuten	1
	03	Bereitschafts-Timer **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Keine Bereitschaftsfunktion 1: Bereitschaftsfunktion (2 Minuten) 2: Bereitschaftsfunktion (4 Minuten)	0
	09	Elektronische Heizstrahler-Startsteuerung (bei eingeschalteter Netzversorgung)	0: Nulldurchgangssynchronsteuerung 1: Phasensteuerung	1
	10	Optikkühlgebläsesteuerung **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Normaler Betrieb 1: Belichtungslampe schaltet ein, Zeitsteuerung	1
	11	Schnellstart-Funktion **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Nicht aktiv 1: Aktiv	1
	13	Stromspar/ Kondensationsverhinderung **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Keine 1: 5 Minuten 2: 10 minuten 3: 30 minuten 4: 60 minuten	0
	14	Stromspar/Kondensations-verhinderung Wahl	0: Stromspar 1: Kondensationsverhinderung	0

	Code	Gegenstand	Funktion	(Werkseitige Einstellung)
Sonderzubehör	20	ADF (FP-7715)	0: Abschalten des ADF's 1: ADF-Installation wird automatisch bestimmt. (Wenn das ADF-Signalkabel an die CPU-Leiterplatte des Kopierers angeschlossen ist, erkennt der Kopierer den ADF automatisch.)	1
	22	Papiereinzugtisch (FP-7715)	0: Abschalten der Papiereinzugskonsole 1: Papiereinzugtisch automatisch bestimmt (Wenn das Signalkabel des Papiereinzugtisches an die CPU- Leiterplatte des Kopierers angeschlossen ist, erkennt der Kopierer den Einzugtisch automatisch.)	1
	24	Belichtungslampenspannung für die Konstantlichtstärkenmessung	0: Inaktiv (ausgeschaltet) 1: Aktiv (eingeschaltet)	1
	33	ADF-Funktion ohne Original (FP-7715)	0: Keine Funktion ohne Original 1: ADF-Funktion ohne Original mit F2-Betriebsart (kontinuierliche Funktion)	0
	34	Hintergrung für Trommelkompensation	0: Keine Funktion 1: Belichtung 1 Schritt (0,2V) alle 1,600 Kopien = max. 38 Schritte 2: Belichtung 1 Schritt (0,2V) alle 2,000 Kopien = max. 30 Schritte 3: Belichtung 1 Schritt (0,2V) alle 2,400 Kopien = max. 26 Schritte	1
Zähler	40	Doppelzählung (Gesamtzähler)	0: Einzelblatt 1: A3-Format 2: A3/B4-Format	1
	41	Kopienzählung	0: An Papiereinzugwalzenkupplung 1: An Papierauslaufsensor	1

	Code	Gegenstand	Funktion	(Werkseitige Einstellung)
Einschaltstatus	50	Automatische Originalhelligkeitsabtastung (bei eingeschalteter Netzversorgung)	0: Nicht aktiv 1: Automatikbetriebpriorität 2: Dokumentenbetriebpriorität	1
	59	Kopiererbetrieb (wenn der Tonerbehälter leer ist)	0: Kopierer stoppt, oder Kopierzyklus wird begrenzt 1: Fortgesetzter Kopiererbetrieb (Einstellung nur im Werk = Nicht diese Nummer verwenden.)	0
	60	Automatische Kassettenposition-Wahl	0: Keine Erkennung 1: Erkennung = Wenn beim Kopierzyklus kein Papier in der Kassette ist, wird automatisch die Kassettenposition gleicher Größe und Richtung gewählt.	1
	63	U 13 Anzeige löschen = Nach Tonerende Erkennung (Kopierer stoppt, oder Kopierablauf unterbrochen)	0: Beim Löschen von U13 eine beliebige Taste drücken 1: Die Taste "Paper Tray" und die Zifferntaste "10" (FP-7713) / Zifferntaste "0" (FP-7715)	0
Vorbeugende Wartung	70	Vorbeugende Wartrung	0: Keine Aufforderung 1: 1.000 Kopien 2: 2.000 Kopien 3: 4.000 Kopien 4: 16.000 Kopien 5: 30.000 Kbpien	5

	Code	Gegenstand	Funktion	(Werkseitige Einstellung)
Papierformat	81	B4/Foolscap-Formatwahl (für Europa-Modell)	0: B4-Format 1: Foolscap-Format (13 x 8 Zoll) 2: Foolscap-Format (13 x 8,5 Zoll)	0
	83	Kopierpapierformat-Einstellung (Kopierer)	0: Das erste Blatt wird auf das größte Papierformat kopiert. 1: Im normalem Kopierbetrieb wählt der Kopierer das Format automatisch aus. 2: A3/US-Ledger 3: B4/US-Legal/Foolscap 4: A4/US-Letter 5: A4R/US-Letter R 6: A5/US-Invoice	4
	84	Kopierpapiereinstellug (Papiereinzugtisch)	0: Das erste Blatt wird auf das größte Papierformat kopiert. 1: Im normalem Kopierbetrieb wählt der Kopierer das Format automatisch aus. 2: A3/US-Ledger 3: B4/US-Legal/Foolscap 4: A4/US-Letter 5: A4R/US-Letter R 6: A5/US-Invoice	4
	88	Papierformateinstellung durch den Bediener	0: Ja 1: Nein	0
	89	Fehlererkennung für den Optik-Lüftermotor 2	0: Erkennung 1: Keine Erkennung	0

Einstellung und Programmierung in der Betriebsart F6

Code	Gegenstand	Funktion	Bemerkungen
00	Wahl von 100% (Verhältnis der vertikalen und der parallelen Position zur Papiereinzugsrichtung) (Standard: 100.7%)	Einstellung von 99,1% auf 100,9%	Maßstab kann um 0,1% (–9 bis +9) verstellt werden.
01	Nur 100% (Verhältnis der parallelen Position zur Papiereinzugrichtung)	Einstellung des Verhältnisses der Parallelposition zur Papiereinzugrichtung	Maßstab kann um 0,1% (–9 bis +9) verstellt werden.
02	100%-Fokussierung	Einstellung der Fokussierung	(–50 bis +50)
03	100%-Maßstab (Verhältnis der vertikalen Position zur Papiereinzugrichtung)	Einstellung des Verhältnisses der vertikalen Position zur Papiereinzugrichtung. (+): Vergrößern (–): Verkleinern	(–20 bis +20)
04	Originalabtastzeitsteuerung (Verkleinerungs und Vergrößerungskopierbetrieb)	Einstellung der Originalabtastzeitsteuerung bei Verkleinerung oder Vergrößerung	Die Registrierungszeitsteuerung kann um 0,2 mm (–20 bis +20) verstellt werden. • Durch Einstellen des Inhalts von C02 in der Betriebsart F8 wird die werksseitige Einstellung des Inhalts von C04 in der Betriebsart F6 automatisch geändert.
05	Einstellung der Kopienvorderkante	Nach Einstellung von C04 erfolgt die Einstellung der Verzögerungszeitsteuerung durch Einschalten der Synchronwalzenkupplung. (+): Papiereinzugzeitsteuerung verzögert (–): Papiereinzugzeitsteuerung verfrüht	Die Zeitsteuerung kann um 0,5 mm (–18 bis +20) verstellt werden. • Durch Einstellen des Inhalts von 02 in der Betriebsart F8 wird die werksseitige Einstellung des Inhalts von 05 in der Betriebsart F6 automatisch geändert.
07	Registrierungsleerbereich der Abbildung (Zeitliche Synchronisation durch die LED - Leiste)	Nach der Einstellung von C05 und C06 wird der kopierfreie Bereich eingestellt.	Der Registrierungsleerbereich kann um 0,5 mm (–18 bis +20) verstellt werden.
08	Hinterkantenzeitsteuerung der Abbildung (Verkleinerung)	Wenn das Original im Format A3 ist, wird eine Einstellung für die Vorderkante vorgenommen, die auftritt, wenn eine 65%-Kopie auf A3 Papier gemacht wird.	Die Hinterkantenregistrierung kann um 0,5 mm (–20 bis +9) verstellt werden.

Code	Gegenstand	Funktion	Bemerkungen
10	Schwärzungsverhinderung-Filmgrundstellung	Einstellung der Schwärzungsverhinderungs-Filmgrundstellung und Löschposition	0,56 mm (–99 bis +99)
11	Belichtung (124 Volt)	Einstellung der Standard Belichtung	Die Belichtung kann um 0,4 V (–99 bis +99) verstellt werden.
12	Fotobetriebsart-Belichtungspannungsänderung (Standard = –16,4V)	Einstellung der Fotobetriebsart-Belichtungsspannung	Die Belichtung kann um 0,8 V (–9 bis +9) verstellt werden.
13	Zoombelichtung (Verkleinerung) (65%) (Standard = +9,4V)	Bei Verkleinerungsbetrieb wird die Beiichtungsspan-nung im Verhältnis zur Dif-ferenz zwischen dem Verkleinerungsmaßstab und dem 100%-Maßstab eingestellt.	Die Belichtung kann um 0,44 V (–9 bis +9) verstellt werden.
14	Zoombelichtung (Vergrößerung) (Standard = +10,8V)	Bei Vergrößerungsbetrieb wird die Belichtungsspnnung im Verhältnis zur Dif-ferenz zwischen dem Vergrößerungsmaßstab und dem 100%-Maßstab eingestellt.	Die Belichtung kann um 0,32 V (200%) (–9 bis +9) verstellt werden.
15	Belichtungsspannungskorrektur zur Konstant-lichtstärkenmessung • Dieser Code sollte nicht verändert werden.	Die Belichtungslampen-spannung wird entsprechend dem Ausgang des Sensors für die automatische Registrierung der Originalhelligkeit eingestellt.	Die Spannung kann um 0,4 V (–99 bis +74) verstellt werden. • Durch Einstellen des Inhalts von C03 in der Betriebsart F8 wird der Inhalt von C15 in der Betriebsart F6 automatische eingestellt.
16	Spannungskorrektur der Belichtungslampe mit konstanter Lichtmenge • Dieser Code sollte nicht verändert werden.	Bei einschalten der Netzversorgung wird die Belichtungslampenspannung C15 dem Sensor zur automatischen Registrierung der Originalhelligkeit eingegeben. Unterscheidet sich der Ermittlungswert des Sensors zur automatischen Registrierung der Originalhelligkeit vom Standardhelligkeits wert, wird die Belichtungs-lampenspannungskorrektur eingestellt. Bei Erstellen einer Kopie wird diese Spannungskorrektur hinzugefügt.	Die Spannung kann um 0,4 V (–99 bis +99) verstellt werden. • Durch Einstellen des Inhalts von C03 in der Betriebsart F8 wird der Inhalt von C16 in der Betriebsart F6 automatisch auf "0" gestellt.

Code	Gegenstand	Funktion	Bemerkungen
17	Gitterspannung (Standard = –820V)	Einstellung der Gitterspannung (–): Heller. (+): Dunkler.	Die Spannung kann um etwa –8,3V (–44 bis +16) verstellt werden.
18	Fotobetriebsart-Gitterspannung (Standard = –520V)	Einstellung der Fotobetriebsart-Gitter-spannung (–): Heller. (+): Dunkler.	Die Spannung kann um etwa –8,3V (–8 bis +52) verstellt werden.
19	Biasspannung (Standard = –250V)	Einstellung der Biasspannung (–): Heller. (+): Dunkler.	Die Spannung kann um etwa –8,3V. (–36 bis +24) verstellt werden.
21	Tonerdichtensensor Verstärkungsspannung (Standard = 6V)	Einstellung der verstär-kungsspannung des Tonerkonzentrationssen-sors (nur zur Verwendung im Werk)	Hier sollten keine Einstel-lungen vorgenommen werden. • Druch Einstellen des Inhalts von 09 in der Betriebsart F8 wird die werksseitige Einstellung des Inhalts von C21 in der Betriebsart F6 automatisch geändert.
26	Prüfspannungspegel des Tonerkonzentrationssensors (Standard = 2,5V)	Einstellung der verstär-kungsspannung des Tonerkonzentrationssen-sors (nur zur Verwendung im Werk)	Hier sollten keine Einstel-lungen vorgenommen werden. • Druch Einstellen des Inhalts von 09 in der Betriebsart F8 wird die werksseitige Einstellung des Inhalts von C26 in der Betriebsart F6 automatisch geändert.
31	Fixiertemperatur **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	Einstellung der Fixiertemperatur (–): Temperatur fällt. (+): Temperatur steigt.	0,7° (–15 bis +15)
32	Originalhelligkeitsspitze bei Auto-Originalhelligkeitspegel	Der Pegel wird proportional zum Unterschied zwischen Helligkeitsspitzenpegel und Normalpegel eingestellt.	Der Pegel kann in Schritten von 1% (–99 bis +99) verstellt werden.
33	Originalhelligkeits-Druch-schnitt Auto-Originalhelligkeitspegels	Der Pegel wird proportional zum Unterschied zwischen Durchschnittspegel und Normalpegel eingestellt.	

Code	Gegenstand	Funktion	Bemerkungen
34	Originalhelligkeit (hell/dunkel) Kontrast der Auto-Originalhelligkeit	Dieser Level dient zur Kontrast Einstellung: Dieser Pegel wird errechnet aus der maximalen/minimalen Belichtung im Verhältnis zur Standart Belichtung.	Der Pegel kann in Schritten von 1% (–99 bis +99) verstellt werden.
36	Registrierung des Originals für ADF (FP-7715)	Einstellung der Registrierungs-Zeitgabe	0,65 mm (–32 bis +32)
41	Papierschlinge (Kopierermagazin)	(Nur Fabrikanwendung) Diese Modus ist für die Einstellung der Länge der Schlinge vor Kopier-Synchronwalze zu verwenden. (–): wird kürzer (+): wird größer	Diese Einstellung sollte nicht gemacht werden. Die Länge der Schlinge ist auf 2,5 ms einzustellen. (–99 bis +99)
42	Papierschlinge (Bypass)		
44	Papierschleife (Papiereinzugtisch) (FP-7715)	Diese Betriebsart dient zum Einstellen der Länge der Schleife, die sich vor der Papierregistrierungswalze am Papiereinzugtisch bildet.	2,5 ms (–99 bis +99)
52	Verkleinerungsmodus-Fokus	Wenn nach Einstellung von C02 im Verkleinerungsmodus die Kopie nicht fokussiert ist, muß hier eine Justage vorgenommen werden.	(–9 bis +9)
53	Vergrößerungsmodus-Fokus	Wenn nach Einstellung von C02 im Vergrößerungsmodus die Kopie nicht fokussiert ist, muß hier eine Justage vorgenommen werden.	(–9 bis +9)
55	Papierschleife (Papiereinzugtisch) (FP-7715)	Diese Betriebsart dient zum Einstellen der Länge der Schleife, die sich vor dem Kopierer bildet.	2,5 ms (–99 bis +99)
56	Bildfreie Hinterkante (Kassette)	Diese Betriebsart dient zum Einstellen der bildfreien Hinterkante (–): wird größer (+): wird kürzer	Die bildfreien Hinterkante kann um 0,5 mm (–20 bis +40) verstellt werden.
57	Bildfreie Hinterkante (Bypass)		

Code	Gegenstand	Funktion	Bemerkungen
60	Fixiertemperatur für Kondensationsverhinderung	Einstellung der Fixiertemperatur für Kondensationsverhinderung. (–): Temperatur fällt. (+): Temperatur steigt.	(–9 bis +9)
61	Hintergrund für Trommel	Zum Ausgleich des Hintergrunds beim Trommelwechsel wird die Belichtungsspannung erhöht. (–): Belichtungsspannung steigt. • Immer "0" eingeben, wenn die Trommel ausgetauscht wird. • Wenn "0" eingegeben wird, wird F7-C43 (Trommelzähler) gelöscht.	0,2V. (–9 bis +38)
62	Tonerdichte	Diese Kompensation wird zu F6-C21 (Tonerdichtensensor-Verstärkungspannung) hinzugefügt, um die Tonerdichtensensor-Verstärkungspannung einzustellen. (+): Nicht einstellen. (–): Die Tonerdichte auf hell einstellen.	0,133V (–2 bis +1)
99	Reset F5 und F6 (Werkseinstellung)	Die Kopiertaste zweimal drücken. • Zum Löschen von F6-alle Codes=0 Einstellung. • F5-C00-1 Einstellung.	—

Betriebsart F7: Elektronikzähler

Code	Gegenstand
21	Gesamtzählung
22	Gesamtzählung der vorbeugenden Wartung **Hinweis:** Wenn mehr als 30.001 Kopien (z.B. F5-C70-5: 30.000 Kopien) eingegeben werden, erscheint "---" im Display.
23	Entwickler-Gesamtzählung
43	Trommelzähler **Hinweis:** Wenn mehr als 2.001 Kopien (z.B. F5-C34-2: 2.000 Kopien) eingegeben werden, erscheint "---" im Display.
99	Alle Zählerinhalte löschen.

Kopiererfunktionseinstellung in der Betriebsartart F8

Code	Gegenstand
00	Einstellung des Belichtungslampenabdeckung für Belichtingslampeneinheit
01	Kopie zur Einstellung der Originalregistrierung
02	Meßwerteingabe für die Einstellung der Originalregistrierung
03	Belichtungslampenspannung zur Messung der konstanten Lichtmenge • Diese Einstellung nach dem Austausch des Sensor zur automatischen Erkennung der Originalhelligkeit vornehmen.
06	Maschinenfehler-und Papierstaulesung (Diese Funktion überprüft den Inhalt der Maschinenfehler- und Papierstauspeicher)
07	Löschung der Maschinenfehler- und Papierstauspeicher
08	Sperrfunktion für Vollschritteinheit, Halbschritteinheit und Spiegeleinheit Nr. 5/6
09	Automatische Verstär-kungseinstellung des Tonerkonzentrationssensors • Diese Einstellung muß beim Wechseln von Entwickler erfolgen.

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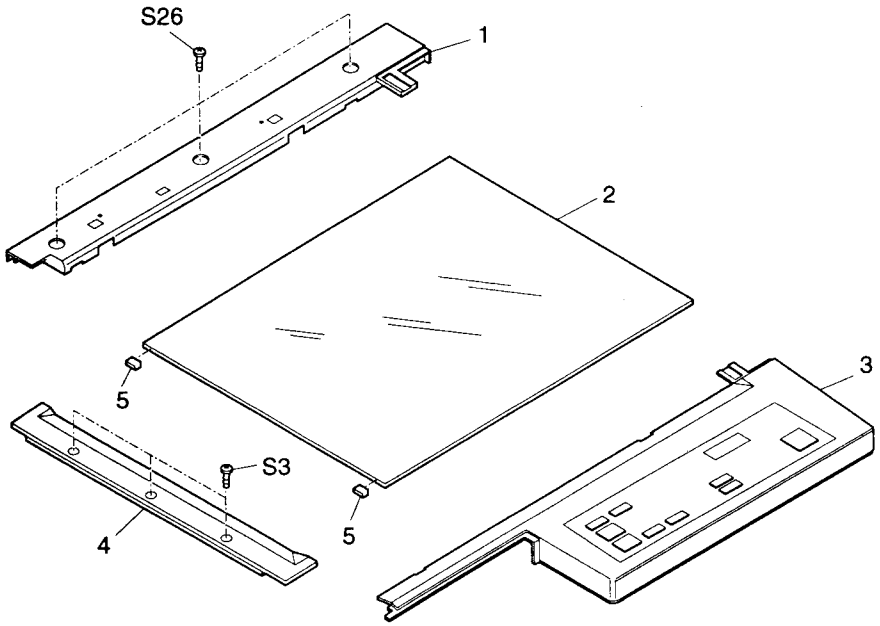
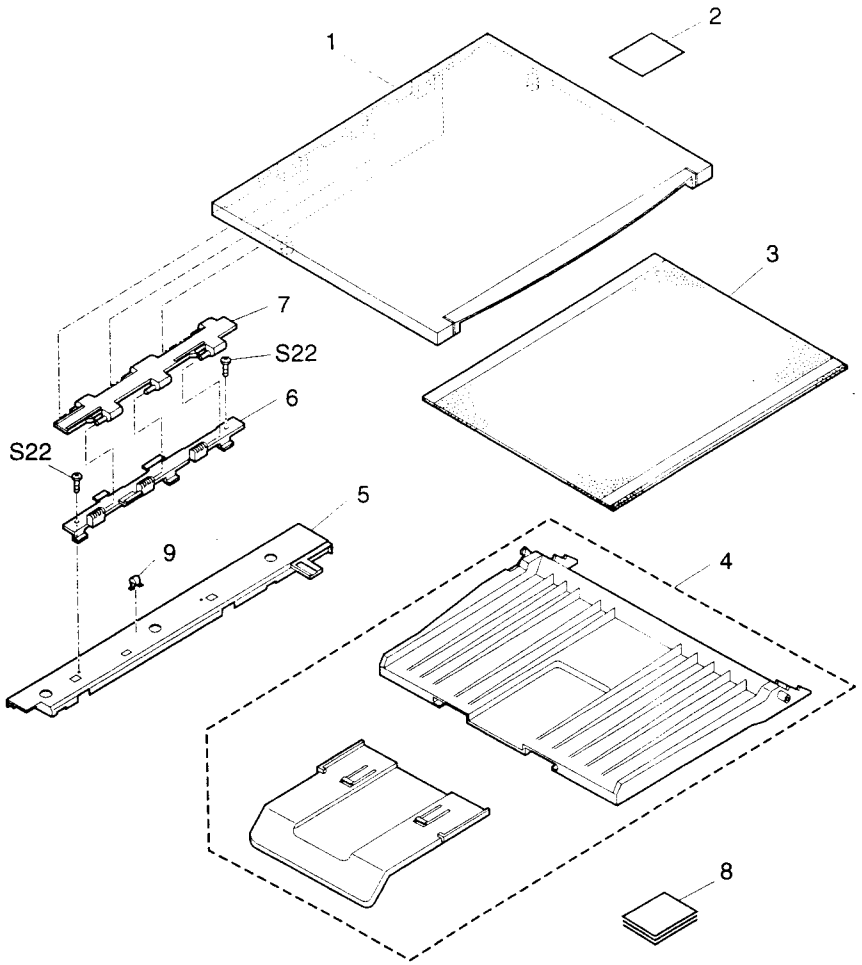
Use and Ordering Information

1. Information contained in this Parts manual is subject to change. Change notice and supplementary pages will be issued on a timely basis.
2. Electrical parts supplied may include previously used components.
3. A Numerical Sales Number, Part Number List is located at the rear of this manual.
4. This manual was developed and is supplied to authorized servicing dealers by Panasonic Co. for the sole purpose of providing information necessary for the equipment's proper support. It is intended that this information be confidential and may not be reproduced without prior written consent from Panasonic Co.
5. Panasonic Co. reserves the right to change any information enclosed herein without prior notification.
   (This includes, but is not limited to part pricing and availability and text.)
6. In common column, "C" indicates part is used in previous models, "N" indicates parts is used only in Model FP-7713/7715 and FA-DS16.
   C13: FP-7113/7115
   C15: FP-7115 or FA-DS15
   C: Other machines
7. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
8. Remarks column, "PM" indicates the parts replacement at cycle.



Covers

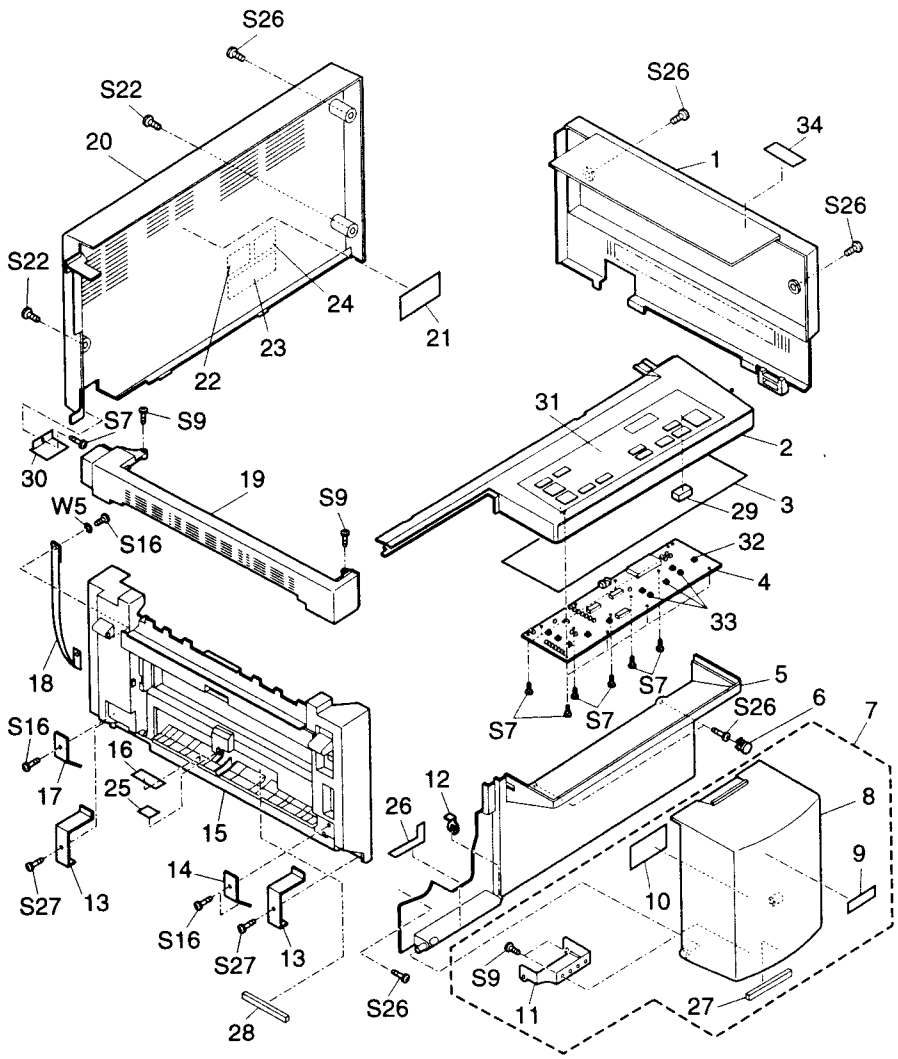
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPNA05711	Top Rear Cover (FP-7713) ⚠	1	C13	
1	FFPNA05921	Top Rear Cover (FP-7715) ⚠	1	C13	
2	FFPGC0154	Platen Glass ⚠	1	C13	
3	FFPXA13D61	Control Panel Ass'y (FP-7713 for North America) ⚠	1	N	
3	FFPXA13G01	Control Panel Ass'y (FP-7715 for North America) ⚠	1	N	
3	FFPXA13D63	Control Panel Ass'y (FP-7713 for others) ⚠	1	N	
3	FFPXA13G03	Control Panel Ass'y (FP-7715 for others) ⚠	1	N	
3	FFPXA13D67	Control Panel Ass'y (FP-7713 for Taiwan) ⚠	1	N	
3	FFPXA13G07	Control Panel Ass'y (FP-7715 for Taiwan) ⚠	1	N	
4	FFPXK29G011	Original Guide Ass'y (for North America)	1	C13	
4	FFPXK29G031	Original Guide Ass'y (Others)	1	C13	
4	FFPXK29G071	Original Guide Ass'y (for Taiwan)	1	C13	
5	FFPKN0271	Glass Cushion (FP-7713)	2	C13	



Covers

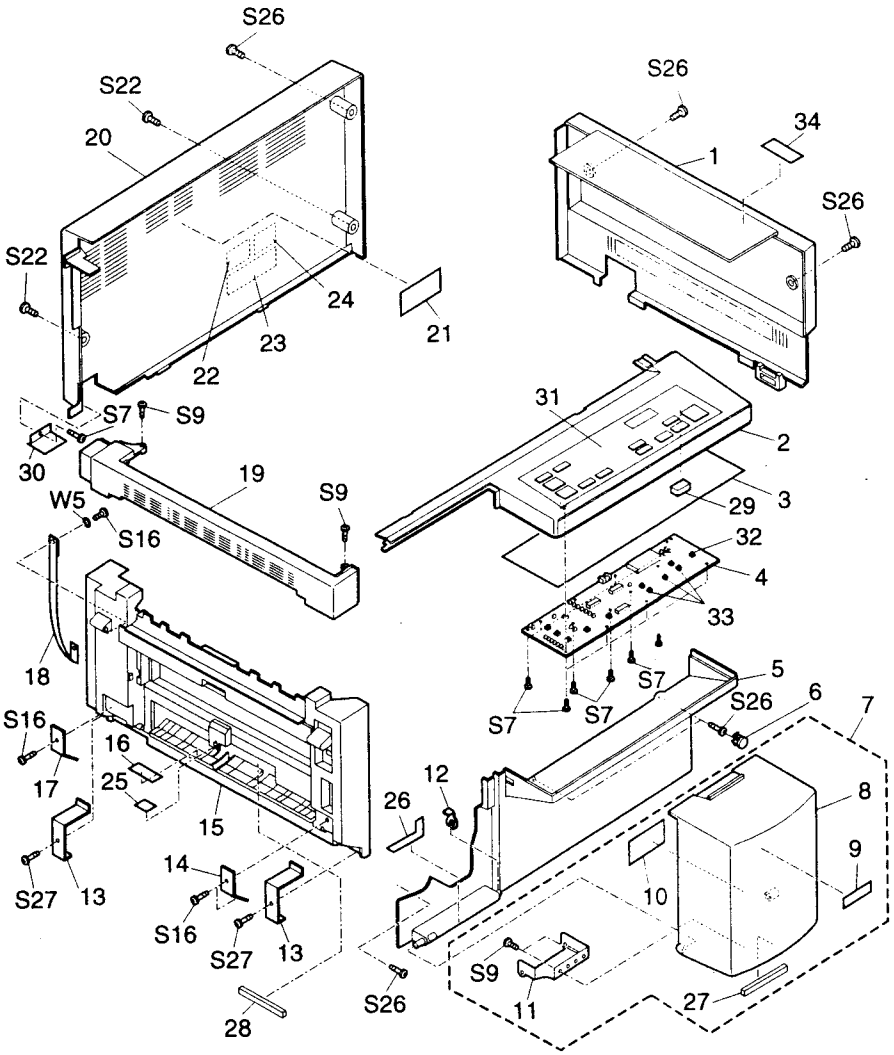
Covers

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPNA05753	Platen Cover	1	N	
2	FFPTE19723	Label, Machine Condition (FP-7713 for North America)	1	N	
2	FFPTE20491	Label, Machine Condition (FP-7715 for North America)	1	N	
2	FFPTE19733	Label, Machine Condition (FP-7713 for others)	1	N	
2	FFPTE20501	Label, Machine Condition (FP-7715 for others)	1	N	
2	FFPTE19792	Label, Machine Condition (FP-7713 for Taiwan)	1	N	
2	FFPTE20511	Label, Machine Condition (FP-7715 for Taiwan)	1	N	
3	FFPNN00352	Platen Rubber (for Taiwan)	1	C13	
3	FFPNN00361	Platen Rubber	1	C13	
4	FFPXJ01D80	Exit Tray Ass'y	1	C13	
5	FFPNA05711	Top Rear Cover (FP-7713) ⚠	1	C13	
5	FFPNA05921	Top Rear Cover (FP-7715) ⚠	1	C13	
6	FFPNH0059	Platen Hinge, Lower ⚠	1	C13	
7	FFPNH0060	Platen Hinge, Upper ⚠	1	C13	
8	FFPTD0827	Operating Guide, English (for North America)	1	N	
8	FFPTD0828	Operating Guide, French (for CANADA)	1	N	
8	FFPTD0829	Operating Guide ,English	1	N	
8	FFPTD0830	Operating Guide, German	1	N	
8	FFPTD0831	Operating Guide, French (except CANADA)	1	N	
8	FFPTD0832.	Operating Guide, Dutch	1	N	
8	FFPTD0833	Operating Guide, Italian	1	N	
8	FFPTD0834	Operating Guide, Spanish	1	N	
8	FFPTD0835	Operating Guide, Swedish	1	N	
8	FFPTD0836	Operating Guide, Portuguese	1	N	
8	FFPTD0837	Operating Guide, Taiwan	1	N	
8	FFPTD0838	Operating Guide, Chinese	1	N	
9	FFPKM0289	Hinge Holder (FP-7715)	1	N	



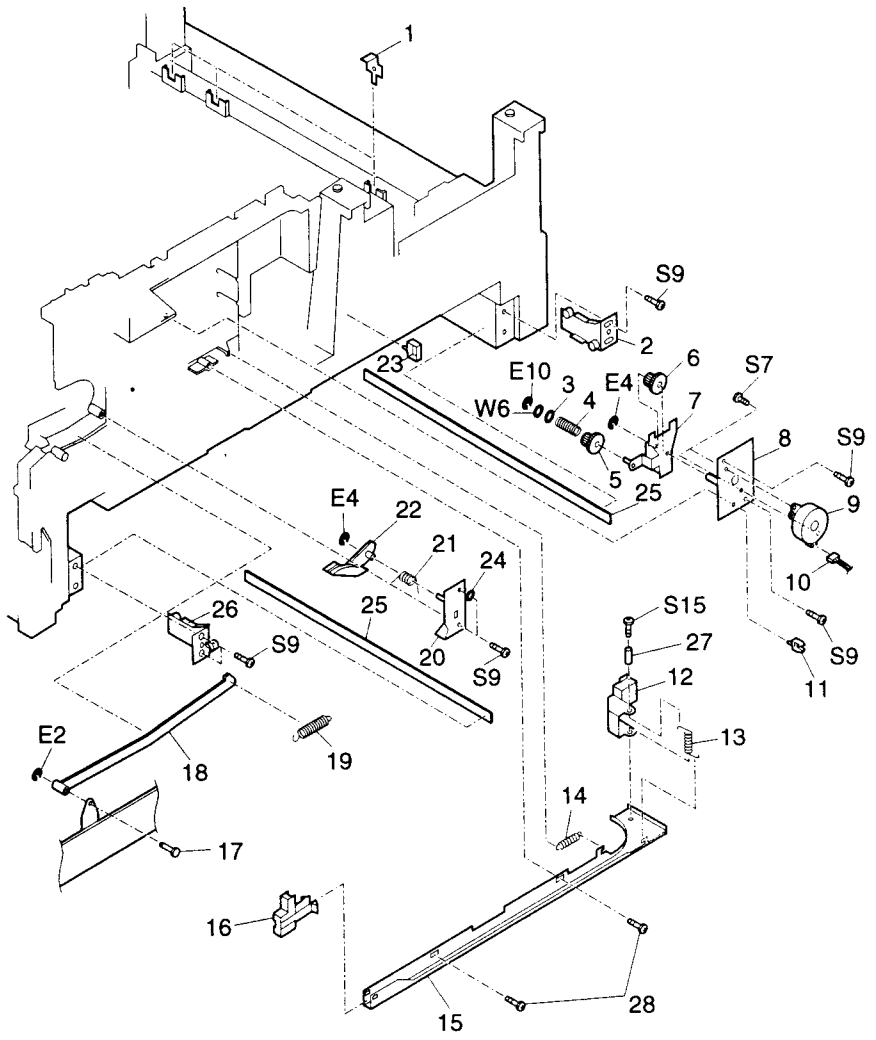
Covers

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPNA0570	Right Cover (FP-7713) ⚠	1	C13	
1	FFPNA05991	Right Cover (FP-7715) ⚠	1	C15	
2	FFPXA24D61	Control Panel Cover, w/o PCB ⚠ (FP-7713 for North America)	1	N	
2	FFPXA24G41	Control Panel Cover, w/o PCB ⚠ (FP-7715 for North America)	1	N	
2	FFPXA24D63	Control Panel Cover, w/o PCB ⚠ (FP-7713 for others)	1	N	
2	FFPXA24G43	Control Panel Cover, w/o PCB ⚠ (FP-7715 for others)	1	N	
2	FFPXA24D67	Control Panel Cover, w/o PCB ⚠ (FP-7713 for Taiwan)	1	N	
2	FFPXA24G47	Control Panel Cover, w/o PCB ⚠ (FP-7715 for Taiwan)	1	N	
3	FFPPJ01861	Insulation Sheet, Control Panel (FP-7713)	1	C13	
3	FFPPJ0195	Insulation Sheet, Control Panel (FP-7715)	1	C13	
4	FFPWB0563	PCB, Control Panel (FP-7713)	1	C13	
4	FFPWB0571	PCB, Control Panel (FP-7715)	1	C13	
5	FFPNA05682	Front Cover ⚠	1	C13	
6	FFPPM0009	Screw Cap	2	C13	
7	FFPXA20D80	Toner Hopper Cover Ass'y (FP-7713)	1	C13	
7	FFPXA20G40	Toner Hopper Cover Ass'y (FP-7715)	1	N	
8	FFPNA0569	Toner Hopper Cover ⚠	1	C13	
9	FFPPK1549	Brand Plate (FP-7713)	1	C13	
9	FFPPK1550	Brand Plate (FP-7715)	1	C13	
10	FFPTE19353	Label, Toner Replacement	1	C13	
11	FFPKD12531	Support, Hopper Cover	1	C13	
12	FFPFJ0039	Touch Ring	1	C13	
13	FFPKR1660	Fulcrum Bracket	2	C13	
14	FFPKE0976	Fulcrum Cover, Front	1	C13	
15	FFPNA05675	Left Cover	1	C13	
16	FFPKM02801	Pad	1	C13	
17	FFPKE0977	Fulcrum Cover, Rear	1	C13	
18	FFPKM0274	Belt, Open/Close	1	C13	
19	FFPNA0572	Upper Left Cover ⚠	1	C13	
20	FFPNA05732	Back Cover (FP-7713) ⚠	1	N	
20	FFPNA0593	Back Cover (FP-7715) ⚠	1	N	
21	FFPHJ0034	Filter (FP-7713)	1	C15	
21	FFPHJ00341	Filter (FP-7715)	1	C15	
22	FFPTE1763	Label, FCC	1	C13	
23	FFPTE01661	Label, Warranty	1	C13	
24	FFPTE19211	Label, DOC	1	C13	
25	FFPHK0916	Guide Mylar	1	C13	
26	FFPHP0731	Seal, Front Cover	1	C13	
27	FFPHP0732	Seal, Toner Hopper Cover	1	C13	
28	FFPKP00771	Pad 1	1	C13	
29	FFPHP0787	Sponge, Print Key	1	N	
30	FFPNA0595	Blind Cover (FP-7715)	1	N	



Covers

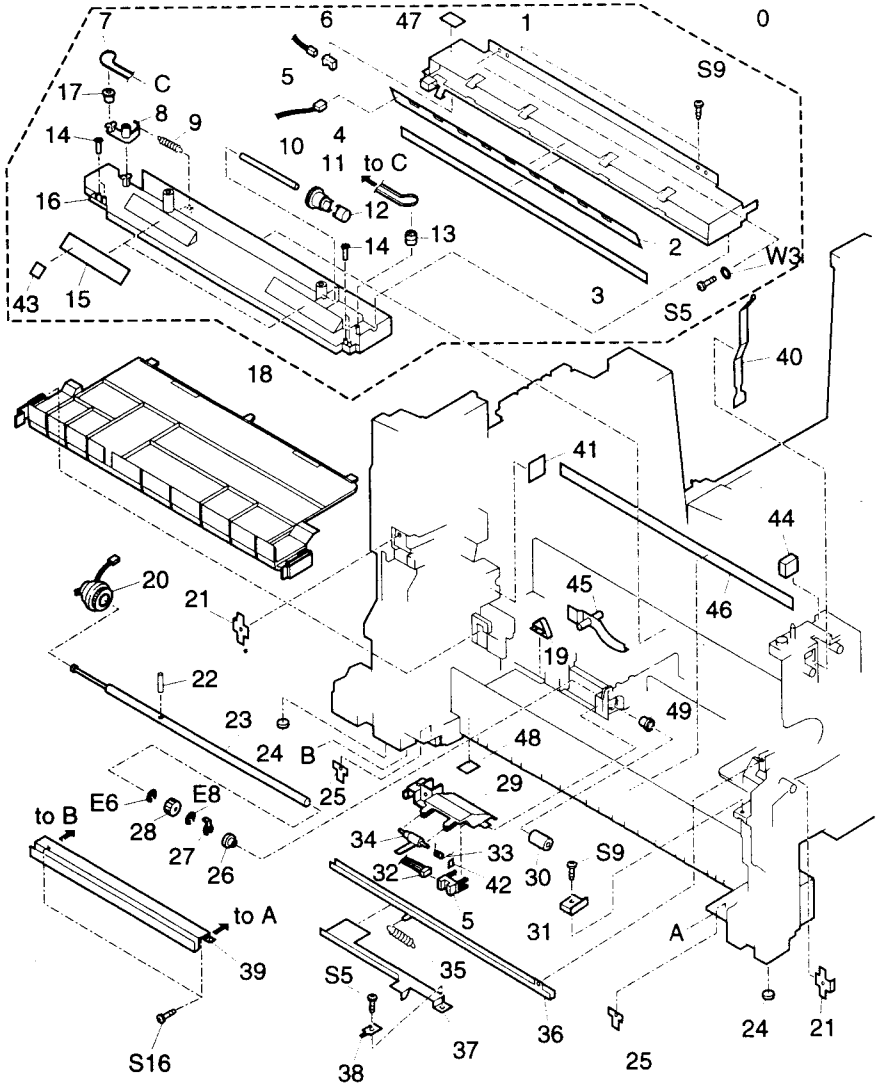
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
31	FFPPJ0210	Control Panel Sheet (FP-7713 for North America)	1	N	
31	FFPPJ0215	Control Panel Sheet (FP-7715 for North America)	1	N	
31	FFPPJ0211	Control Panel Sheet (FP-7713 for others)	1	N	
31	FFPPJ0216	Control Panel Sheet (FP-7715 for others)	1	N	
31	FFPPJ0212	Control Panel Sheet (FP-7713 for Taiwan)	1	N	
31	FFPPJ0217	Control Panel Sheet (FP-7715 for Taiwan)	1	N	
32	EVQ21F05B	Print Key Switch (FP-7715)	1	C13	
33	EVQ21505R	Other Key Switch, Print Key switch (FP-7713)	20	C13	
34		(Japan only)			



Frame, Front

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPFF0071	Nut	3	C13	
2	FFPXA36G801	Roller Bracket, Right	1	N	
3	FFPMV0002	Polyslider	1	C13	
4	FFPLP0942	Spring	1	C13	
5	FFPMF0945	Gear	1	C13	
6	FFPMF0944	Gear	1	C13	
7	FFPXA23D80	Drive Bracket Sub Ass'y	1	C13	
8	FFPXA22D80	Eraser Drive Frame Ass'y	1	C13	
9	42SPM24DGYM	Stepping Motor	1	C13	
10	FFPWC1540	BSM Harness	1	C13	
11	UAMS05S2	Clamp	1	C13	
12	FFPLK03151	Actuator	1	N	
13	FFPLR0251	Spring	1	C13	
14	FFPLP0940	Spring	1	C13	
15	FFPKS0999	Connection Plate	1	C13	
16	FFPKM0273	Bracket	1	C13	
17	FFPFG04582	Pin	1	C13	
18	FFPLK03021	Open/Close Arm, Front	1	C13	
19	FFPLP0938	Arm Spring	1	C13	
20	FFPKB0878	Lift Frame, Shutter	1	C13	
21	FFPLR02501	Pressure Spring	1	C13	
22	FFPLL05332	Shutter Lift Lever 1	1	C13	
23	LWS1S	LWS	1	C13	
24	FFPMV0008	Polyslider	1	C13	
25	FFPHK0929	Slide Sheet 1	2	C13	
26	FFPXA37G801	Roller Bracket, Left	1	N	
27	FFPLT0124	Sleeve	1	C13	
28	FFPFA0069	Shoulder Screw	2	C13	

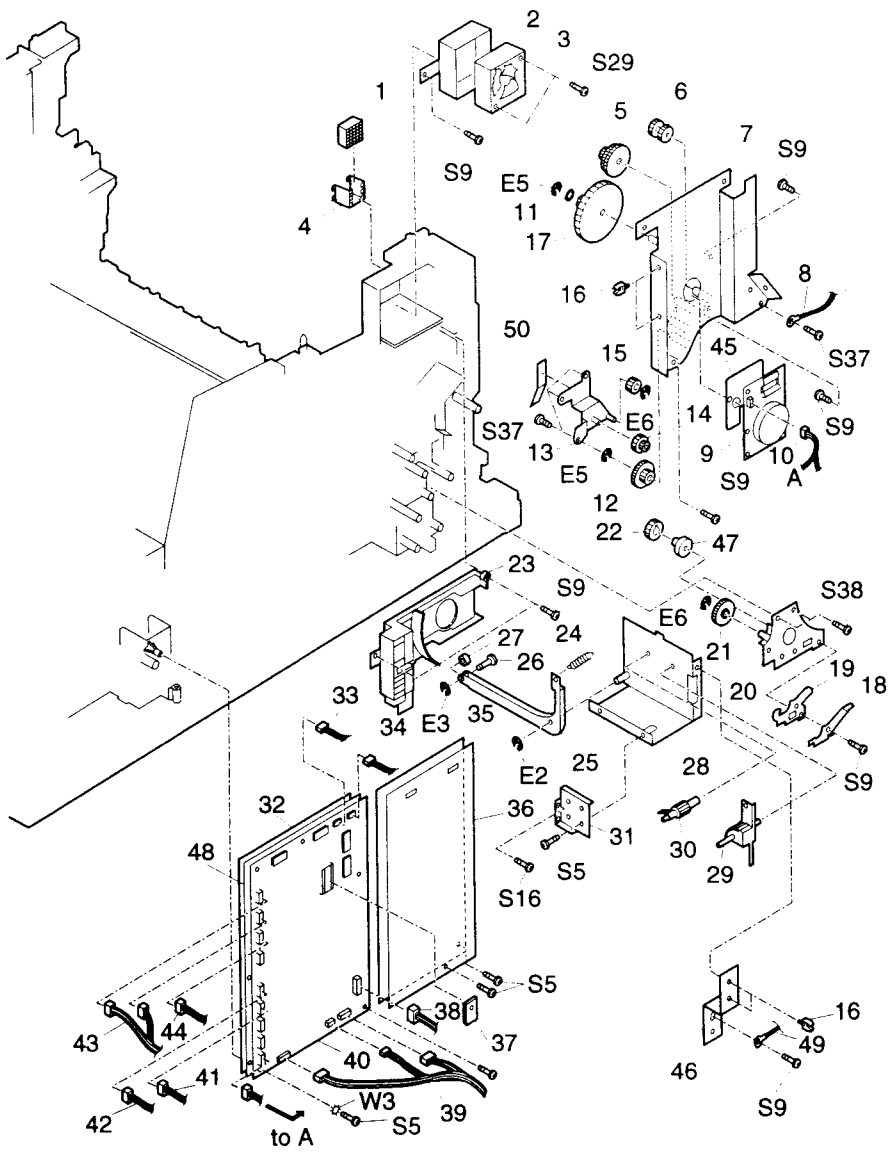
Frame



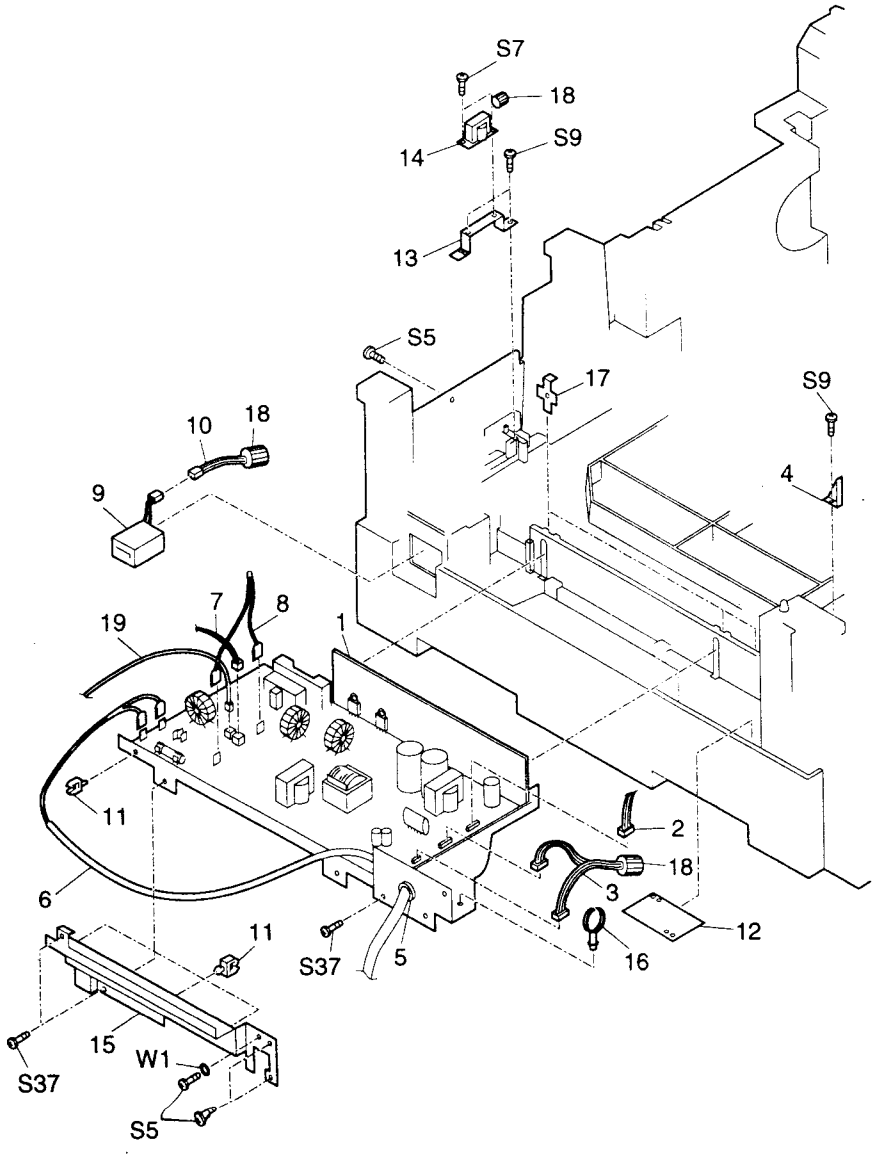
Frame, Left

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
0	FFPXA11D60	Eraser Ass'y (Others)	1	N	
0	FFPXA11D61	Eraser Ass'y (for North America/Taiwan)	1	N	
1	FFPXA26D80	Eraser Lamp Frame Ass'y	1	C13	
2	PQ24V12WMG1	Lamp	1	C13	
3	FFPGB0021	Filter	1	C13	
4	FFPWC1550	EL Harness	1	C13	
5	TLP1225	Sensor	2	C13	
6	FFPWC1537	SHPSC Harness	1	C13	
7	FFPJC0260	Belt Shutter	1	N	PM
8	FFPLK0304	Pulley Arm	1	C13	
9	FFPLP09391	Tension Spring	1	C13	
10	FFPLG1390	Gear Shaft	1	C13	
11	FFPMF0964	Gear, Idle	1	C13	
12	FFPMF0963	Gear	1	C13	
13	FFPMB0227	Pulley	1	C13	
14	FFPMA0519	Guide Roller	4	C13	
15	FFPGC0185	Reflection Sheet	2	C13	
16	FFPXA25D801	Eraser Base Ass'y	1	C13	
17	FFPMB0224	Pulley	1	C13	
18	FFPKF12226	Paper Guide	1	N	
19	FFPLQ04401	Lift Spring	1	N	
20	BJ-3.5-W03	Magnetic Clutch Ass'y (FP-7713)	1	N	
20	BJ-3.5-W04	Magnetic Clutch 2 Ass'y (FP-7715)	1	N	
21	FFPFF0071	Nut	2	C13	
22	XPJ2D10WV	Pin	1	C13	
23	FFPLG15721	Paper Feed Roller Shaft	1	N	
24	FFPNM0028	Foot	2	C13	
25	FFPFF0072	Nut	2	C13	
26	FFPMQ0594	Bushing 1	1	N	
27	FFPFJ0039	Touch Ring	1	C13	
28	FFPMF0797	DFP Drive Gear	1	C13	
29	FFPKM02761	Bracket, Sensor	1	C13	
30	FFPMA05161	Paper Feed Roller	1	C13	PM
31	FFPKS10101	Stopper (except North America)	1	C13	
32	FFPWC1543	RS Harness (FP-7713)	1	C13	
32	FFPWC1571	RS Harness (FP-7715)	1	C13	
33	FFPLR02531	Spring	1	C13	
34	FFPLL05341	Sensor Lever	1	C13	
35	FFPLP0959	Spring	1	C13	
36	FFPKD12633	Support Stay	1	C13	
37	FFPKB08691	Slide Plate	1	C13	
38	FFPKF1364	Roller Holder	1	N	
39	FFPKD12592	Lift Stay	1	C13	
40	FFPLQ0391	Drum Ground Plate	1	C13	
41	FFPHK0923	Mylar	1	C13	
42	FFPKH03071	Spacer	1	C13	
43	FFPJC0221	Sheet, Preventing Reflection	2	C13	
44	FFPKN0334	Cushion	1	C13	
45	FFPLL05471	Sensor Lever (FP-7715)	1	C13	
46	FFPHK0933	Slide Sheet 5	1	C13	
47		(Japan only)			
48	FFPJC0207	No. 6 Mirror Sheet	1	C13	
49	FFPMQ0602	Bushing 2	1	N	

Frame



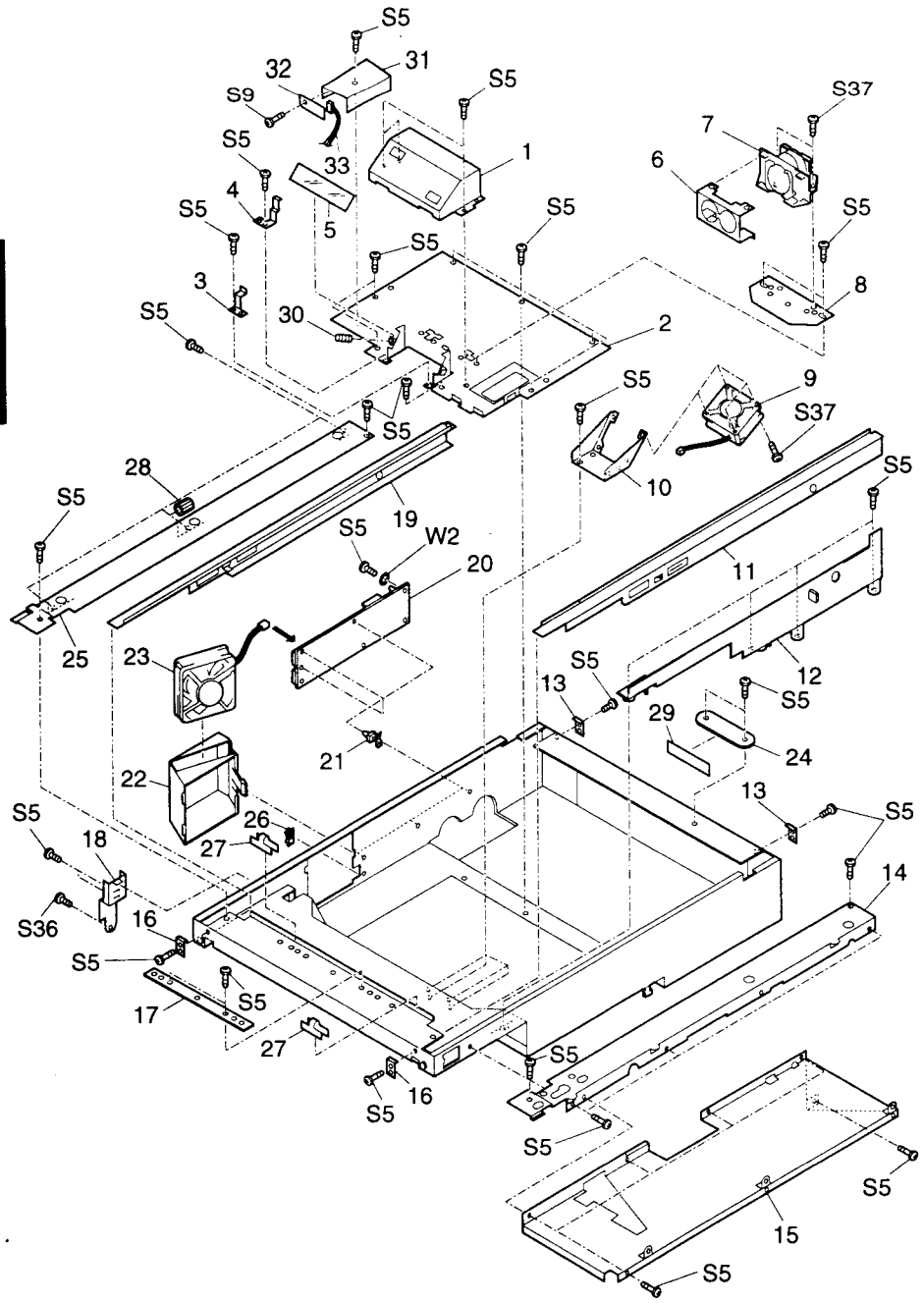
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPHJ00351	Ozone Filter	1	C13	PM
2	FFPHA0067	Duct (FP-7715)	1	N	
2	FFPHA00661	Duct (FP-7713)	1	N	
3	FBA08A24H2F0	Fan Motor 1	1	C13	
4	FFPKD12521	Holder, Ozone Filter	1	C13	
5	FFPMF0936	Gear 1	1	C13	
6	FFPMF09382	Gear, Developer Drive	1	C13	
7	FFPXA17G00	Drive Frame Ass'y	1	C13	
8	FFPWC1555	KBE Harness ⚠	1	C13	
9	DNQ18A12R20A	Main Motor	1	C13	
10	FFPWC1535	MF Harness	1	C13	
11	FFPMV0004	Polyslider	1	C13	
12	FFPMF09391	Gear, Paper Feed Drive	1	C13	
13	FFPXA18D80	Drive Bracket 3 Ass'y	1	C13	
14	FFPMF09371	Gear 2	1	C13	
15	FFPMF1116	Gear, Idle 2	1	N	
16	UAMS05S2	Clamp	4	C13	
17	FFPMF09351	Gear, Drum Drive	1	C13	
18	FFPLQ03954	Spring	1	C13	
19	FFPKH0306	Spacer	1	C13	
20	FFPKS10117	Bracket, Idle Shaft	1	N	
21	FFPMF0917	Gear, 19T	1	C13	
22	FFPMF09571	Gear, DFP Shaft	1	C13	
23	FFPXA09D80	High Voltage Terminal Ass'y	1	C13	
24	FFPLP09601	Lift Spring	1	C13	
25	FFPLL0536	Cassette Lift Lever	1	C13	
26	FFPLG1007	Lift Roller Shaft	1	C13	
27	FFPMA0374	Lift Roller	1	C13	
28	FFPKQ01621	Lift Base	1	C13	
29	FFPMF0956	Gear, Cassette Lift	1	C13	
30	FFPLK03071	Cassette Lift Arm	1	C13	
31	FFPKS10021	Lift Support Plate	1	C13	
32	FFPKS09972	CPU Shield Plate	1	C13	
33	FFPWC1536	SHPS Harness	1	C13	
34	FFPWC1550	EL Harness	1	C13	
35	EUKMBN602HB	PCB HVPS ⚠	1	C13	
36	FFPKE0965	Cover, PCB HVPS ⚠	1	C13	
37	FFPAH0204	P-Rom (FP-7713)	1	N	
37	FFPAH0205	P-Rom (FP-7715)	1	N	
38	FFPWC1543	RS Harness (FP-7713)	1	C13	
38	FFPWC1571	RS Harness (FP-7715)	1	C13	
39	FFPWC1572	KB Harness (FP-7715)	1	C13	
40	FFPWB06011	PCB CPU (FP-7715)	1	N	
40	FFPWB0601	PCB CPU (FP-7713)	1	N	
41	FFPWC1547	VL Harness	1	C13	
42	FFPWC1542	VP Harness	1	C13	
43	FFPWC1538	M Harness	1	C13	
44	FFPWC1540	BSM Harness	1	C13	
45	FFPKB08821	Drive Frame 2	1	C13	
46	FFPKE13741	Clutch Stopper	1	N	
47	FFPMQ0536	Bushing	1	N	
48	FFPJC0259	CPU Shield Sheet (for Taiwan)	1	N	
49	FFPWC1656	Ground Harness (for Taiwan)	1	N	
50	FFPDE0077	Ground Plate	1	N	



Frame, Right

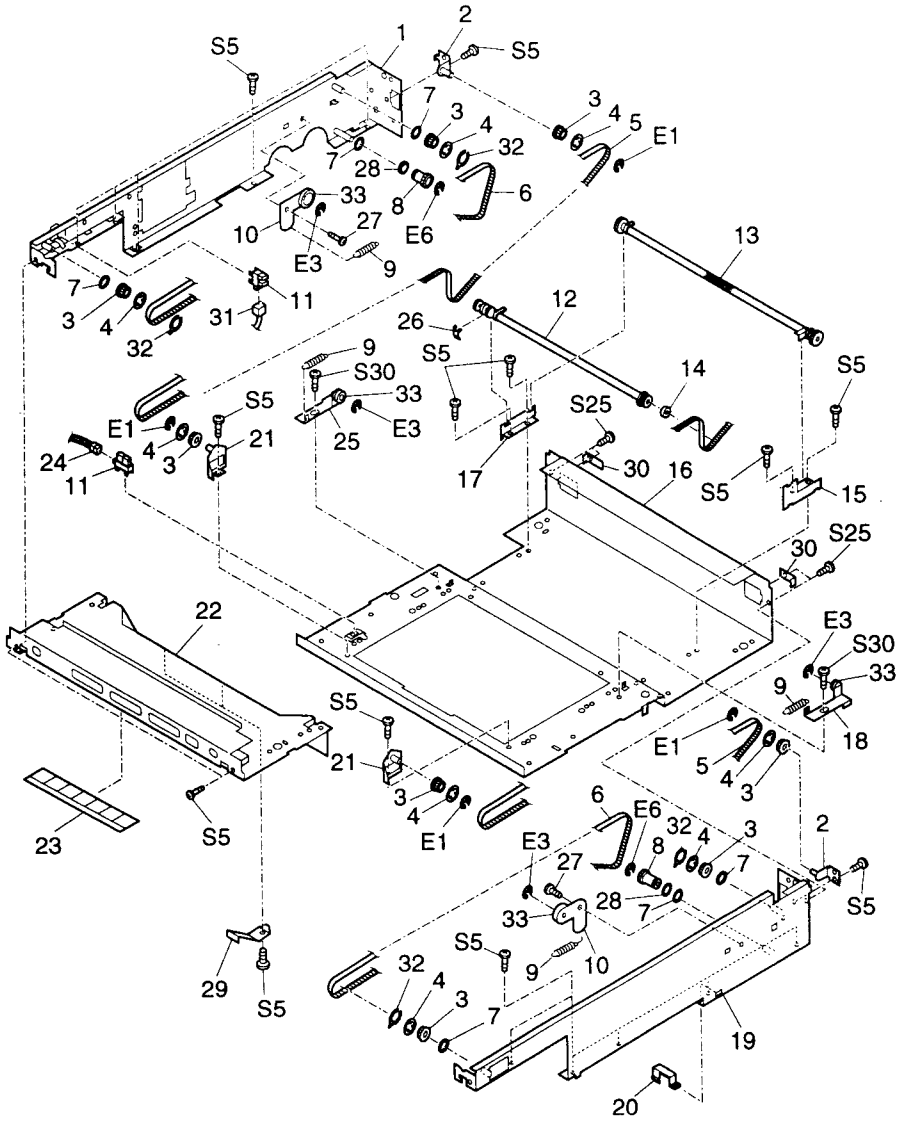
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPWB05643	PCB, Power Supply ⚠ (FP-7715 for Taiwan)	1	C13	
1	FFPWB0564	PCB, Power Supply ⚠ (FP-7713 for Taiwan)	1	C13	
1	FFPWB05641	PCB, Power Supply ⚠ (FP-7713 for North America)	1	C13	
1	FFPWB05644	PCB, Power Supply ⚠ (FP-7715 for North America)	1	C13	
1	FFPWB05645	PCB, Power Supply ⚠ (FP-7713 for others)	1	C13	
1	FFPWB05645	PCB, Power Supply ⚠ (FP-7715 for others)	1	C13	
2	FFPWC1542	VP Harness	1	C13	
3	FFPWC1547	VL Harness	1	C13	
4	FFPKD12822	Optics Support Plate	1	C13	
5	SR6N3-4	Cord Bushing (for North America) ⚠	1	C13	
5	SR6N4-4	Cord Bushing (for Taiwan) ⚠	1	C13	
5	SR6N4	Cord Bushing (Others) ⚠	1	C13	
6	FFPEV0130	Power Cord (for Taiwan)	1	C13	
6	FFPEV0132	Power Cord (for North America)	1	C13	
6	FFPEV0135	Power Cord (for China)	1	C13	
6	FFPEV0117	Power Cord (Others)	1	C13	
6	FFPEV0118	Power Cord (for Australia)	1	C13	
6	FFPEV0119	Corona Power Cord (for U.K.)	1	C13	
7	FFPWC1552	LPC Harness ⚠	1	C13	
8	FFPWC1535	MF Harness	1	C13	
9	FFPCV0009	Total Counter	1	C13	
10	FFPWC1538	M Harness	1	C13	
11	LWS1S	LWS	4	C13	
12	FFPKE09841	Cover	1	C13	
13	FFPKD12701	Bracket, Choke Coil (except North America)	1	C13	
14	CH48I40	Choke Coil (except North America/Taiwan)	1	C13	
15	FFPNA0587	Shield Plate, Power Supply	1	C13	
16	HL18-0	Harness Lifter	1	C13	
17	FFPFF0071	Nut	3	C13	
18	E1815MRC	Ferrite Core (except North America)	3	C13	
19	FFPWC1575	ADF Power Sub-Harness (FP-7715)	1	C13	

P7



Optics Unit

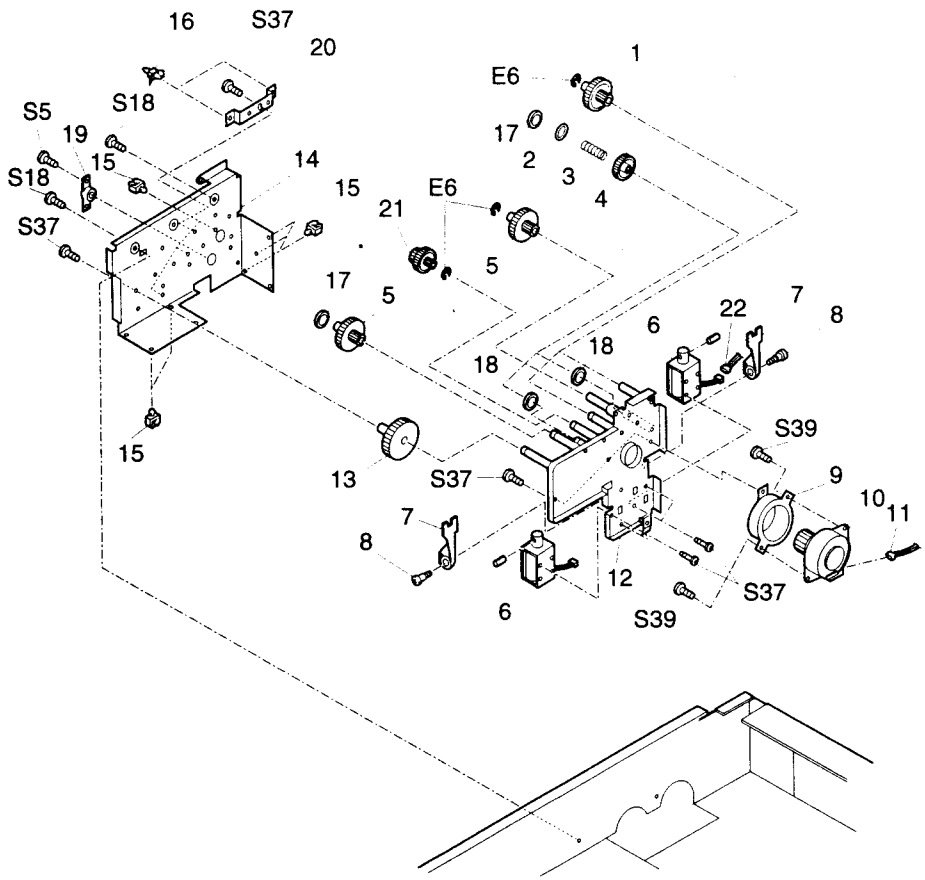
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPKE09633	Lens Cover	1	C13	
2	FFPKB08794	Bottom Plate, Lens	1	N	
3	FFPLQ0375	Spring	1	C13	
4	FFPLQ0376	Spring	1	C13	
5	FFPGC0174	No. 4 Mirror	1	C13	
6	FFPJC01871	Insulation Sheet	1	C13	
7	FFPGA0074	Lens	1	C13	
8	FFPKS06713	Adjusting Plate, Lens	1	C13	
9	FBA06A24U2CS	Fan Motor 2 (Option for FP-7713)	1	C13	
10	FFPKR16731	Bracket, Fan (FP-7715)	1	C13	
11	FFPKF12153	Optics Rail, Front	1	C13	
12	FFPKF12172	Harness Guide	1	C13	
13	FFPKD1240	Harness Holder	2	C13	
14	FFPKD12373	Glass Support, Front	1	N	
15	FFPKD12541	Control Panel Stay	1	C13	
16	FFPKD12391	Rail Holder, Left	2	C13	
17	FFPKS0669	Adjusting Plate	1	C13	
18	FFPKD1242	Stopper Plate	1	C13	
19	FFPKF12163	Optics Rail, Rear	1	C13	
20	FFPWB0565	PCB Optics Drive	1	C13	
20	FFPWB05651	PCB Optics Drive (for Taiwan)	1	C13	
21	KGLS6S	Card Spacer	3	C13	
22	FFPHA00651	Duct	1	C13	
23	FBA08A24H2F0	Fan Motor 1	1	C13	
24	FFPKU0173	Support Plate, Right Cover (FP-7715)	1	C13	
25	FFPKD12384	Glass Support, Rear	1	N	
26	EDS1	Edge Saddle	1	C13	
27	FFPKN0338	Glass Cushion (FP-7715)	2	C13	
28	E1815MRC	Ferrite Core (except North America)	1	C13	
29	FFPHK0927	Protection Sheet	1	C13	
30	XXE3D8FP	Set Screw	1	C13	
31	FFPKE1056	AE Sensor Case	1	N	
32	FFPWB0580	PCB, AE Sensor	1	N	
33	FFPWC1766	AE Harness	1	N	



Optics Unit

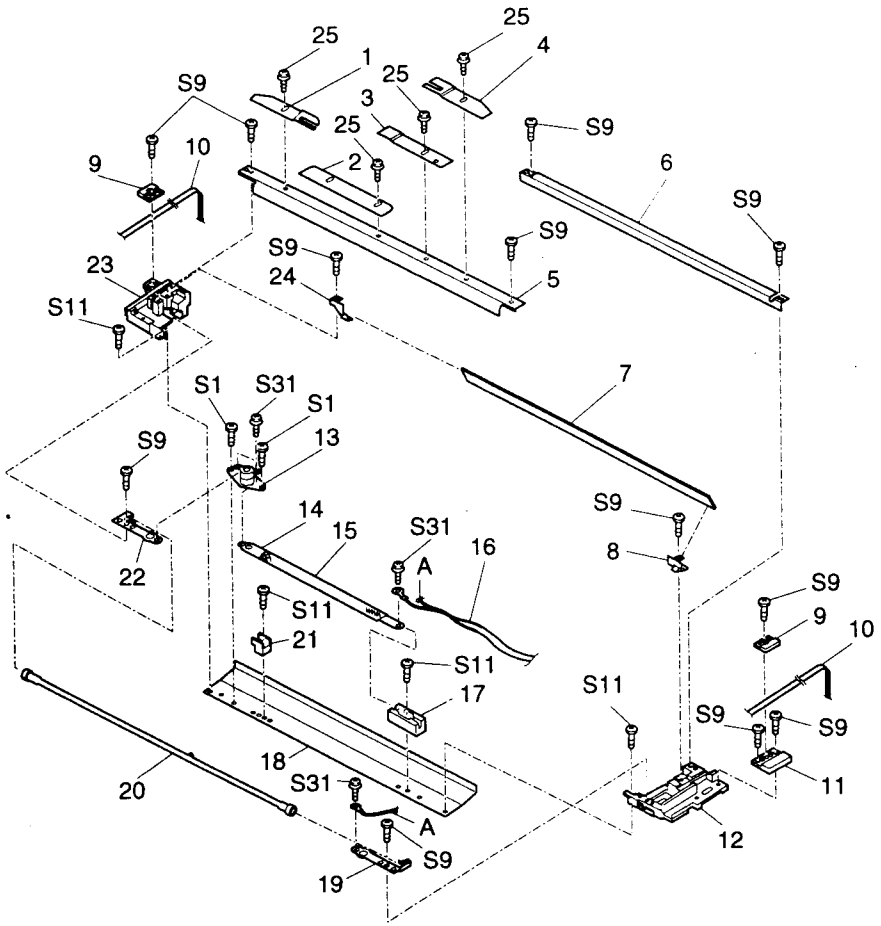
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPKB08758	Rear Frame	1	N	
2	FFPXK19D80	Pulley Bracket, Right Ass'y	2	C13	
3	FFPMB0220	Pulley 1	8	C13	
4	FFPKQ01423	Flange	8	C13	
5	FFPMN0105	Belt, Half Speed Unit	2	C13	
6	FFPMN0104	Belt	2	C13	
7	FFPMV0004	Polyslider	6	C13	
8	FFPMB02212	Pulley	2	C13	
9	FFPLP1059	Tension Spring	4	N	
10	FFPXK32D60	Tension Arm Ass'y	2	N	
11	TLP1225	Sensor	2	C13	
12	FFPXK21D802	Shaft Ass'y, Half Speed Unit	1	C13	
13	FFPXK22D80	Shaft Ass'y	1	C13	
14	FFPMQ0532	Bushing	1	C13	
15	FFPKD12506	Front Stay, Optics	1	C13	
16	FFPKB08526	Bottom Plate, Right	1	C13	
17	FFPKD12514	Rear Stay, Optics	1	C13	
18	FFPXK33D60	Tension Arm Ass'y, Front	1	N	
19	FFPKB08748	Front Frame	1	N	
20	FFPKD1241	Harness Holder	1	C13	
21	FFPXK17D80	Pulley Bracket, Left Ass'y	2	C13	
22	FFPKB08832	Bottom Plate, Left	1	C13	
23	FFPDU0063	Discharge Brush	1	C13	
24	FFPWC1533	LPF Harness	1	C13	
25	FFPXK34D60	Tension Arm Ass'y, Rear	1	N	
26	FFPFJ0033	Touch Ring	1	C13	
27	FFPFA0121	Shoulder Screw	2	C13	
28	FFPMQ0601	Bushing	2	N	
29	FFPLQ04081	Pressure Spring, Pad	2	C13	
30	FFPKD1283	Bracket, Half Speed Unit	2	C13	
31	FFPWC1546	LHP Harness	1	C13	
32	FFPFJ0042	Touch Ring	4	C13	
33	FFPMB02231	Tension Roller	4	N	

P9



Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPMF09331	Gear, Idle 2	2	C13	
2	FFPMV0030	Polyslider	2	C13	
3	FFPLP09371	Selection Spring	2	C13	
4	FFPMF0932	Gear, Idle 1	2	C13	
5	FFPMF0934	Gear, Idle 3	2	C13	
6	FFPXK30D80	Solenoid Ass'y	2	C13	
7	FFPLL0532	Selection Lever	2	C13	
8	FFPLG09411	Slide Shaft Screw	2	C13	
9	FFPHL0010	Damper	1	C13	
10	FFPXK27D80	Motor Ass'y	1	C13	
11	FFPWC1539	LM Harness	1	C13	
11	FFPWC1722	LMD Harness (for Taiwan)	1	C13	
12	FFPKB08763	Motor Frame 1	1	C13	
13	FFPMF09291	Gear, Idle 4	1	C13	
14	FFPKB08594	Motor Frame 2	1	C13	
15	UAMS05S2	Clamp	8	C13	
16	KGLS3S	Card Spacer	2	C13	
17	FFPHP0735	Cushion	3	C13	
18	FFPHP0736	Cushion	2	C13	
19	FFPMQ0525	Motor Bushing	1	C13	
20	FFPKR16721	Bracket, PCB	1	C13	
21	FFPMF0976	Gear, Idle 5	1	C13	
22	FFPWC1721	ZM Harness (for Taiwan)	1	C13	

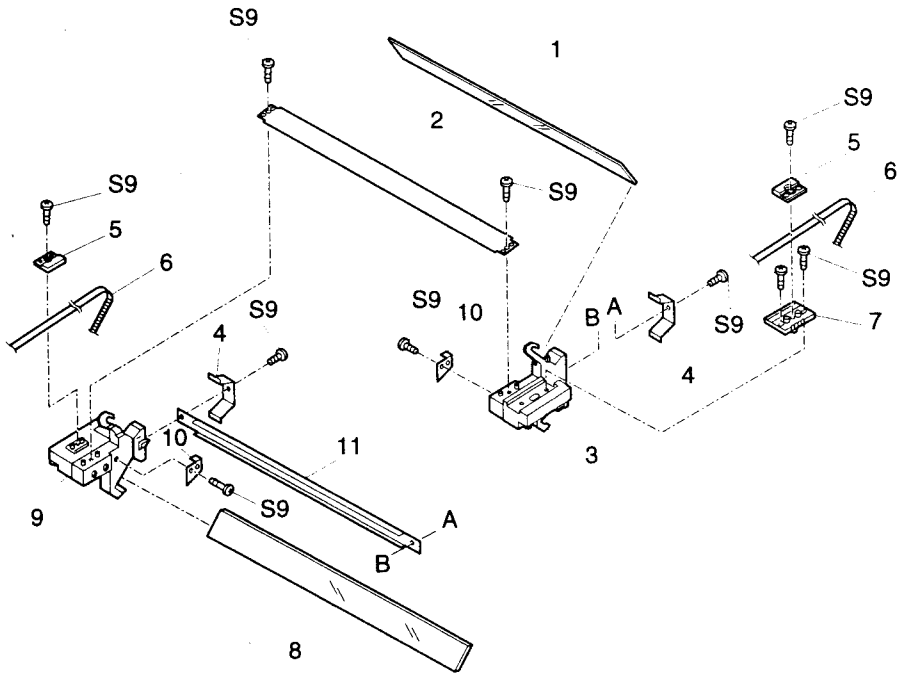
Optics



Optics, Exposure Lamp Unit

Ref. No.	Part No.	Description	Q'ty Per Unit	Common	Remarks
1	FFPJC02181	Adjust Plate 4, Optics	1	C13	
2	FFPJC0217	Adjust Plate 3, Optics	1	C13	
3	FFPJC02161	Adjust Plate 2, Optics	1	C13	
4	FFPJC02151	Adjust Plate 1, Optics	1	C13	
5	FFPGC0176	Main Reflector, Upper	1	C13	
6	FFPGC0178	Sub Reflector	1	C13	
7	FFPGC0179	No. 1 Mirror	1	C13	
8	FFPLQ03771	Spring	1	C13	
9	FFPKD1243	Belt Holder 1	2	C13	
10	FFPMN0104	Belt	2	C13	
11	FFPKD1244	Belt Holder 2	1	C13	
12	FFPKQ01432	Side Frame, Front	1	C13	
13	FFPET0013	Thermostat ⚠	1	C13	
14	FFPDF0254	Terminal Plate	1	C13	
15	FFPEZ0202	Tube	1	C13	
16	FFPWC1553	LP Harness ⚠	1	C13	
17	FFPDE0070	Lamp Bracket, Front	1	C13	
18	FFPGC01771	Main Reflector, Lower	1	C13	
19	FFPDF02533	Lamp Terminal, Front	1	C13	
20	E08V025WN2A	Exposure Lamp ⚠ (for North America/Taiwan)	1	C13	PM
20	E16V025WN2A	Exposure Lamp (Others) ⚠	1	C13	PM
21	FFPDE0071	Lamp Bracket, Rear	1	C13	
22	FFPDF02552	Lamp Terminal, Rear	1	C13	
23	FFPKQ01442	Side Frame, Rear	1	C13	
24	FFPLQ03781	Spring	1	C13	
25	FFPFA0111	Shoulder Screw	4	C13	

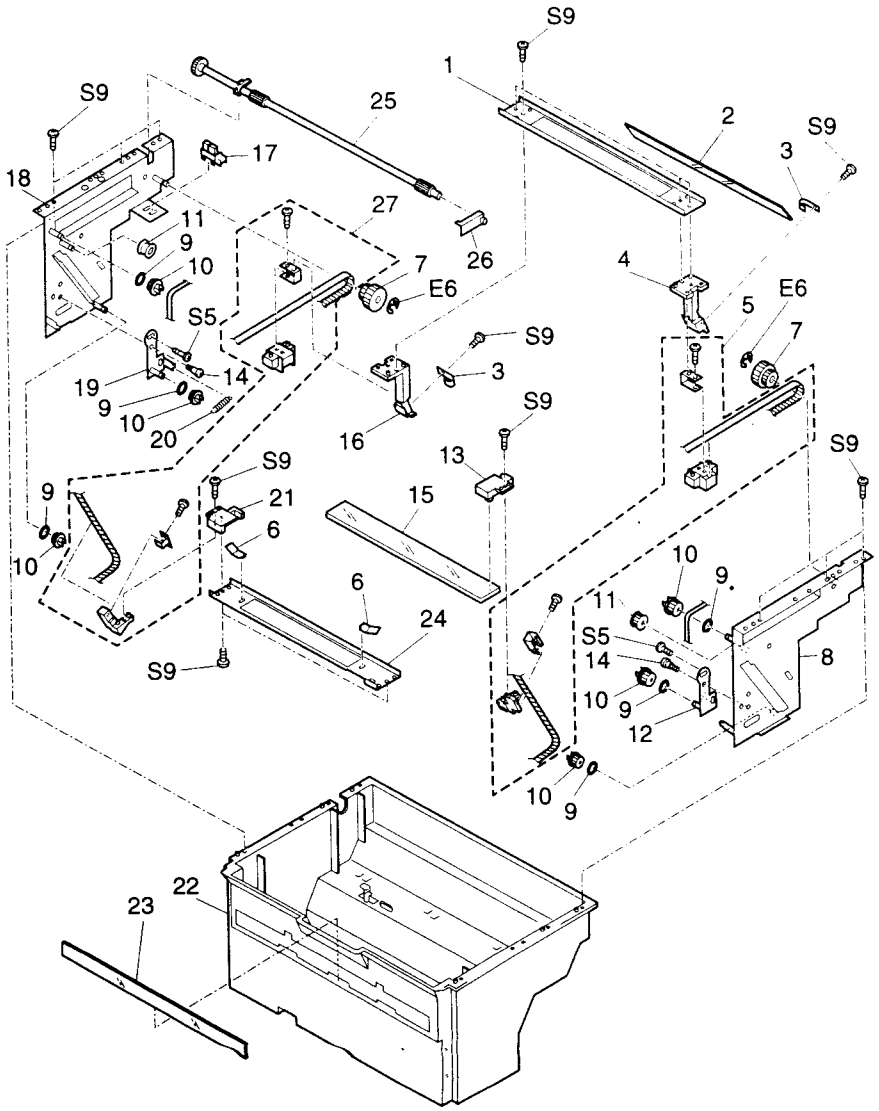
Optics



Optics, Half Speed Unit

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPGC0180	No. 2 Mirror	1	C13	
2	FFPKS0994	Connection Plate	1	C13	
3	FFPKQ01452	Side Frame, Front	1	C13	
4	FFPLQ0379	Spring	2	C13	
5	FFPKD1243	Belt Holder 1	2	C13	
6	FFPMN0105	Belt, Half Speed Unit	2	C13	
7	FFPKD1244	Belt Holder 2	1	C13	
8	FFPGC0181	No. 3 Mirror	1	C13	
9	FFPKQ01461	Side Frame, Rear	1	C13	
10	FFPKD12711	Mirror Support	2	C13	
11	FFPKU00952	Support, Half Speed Unit	1	C13	

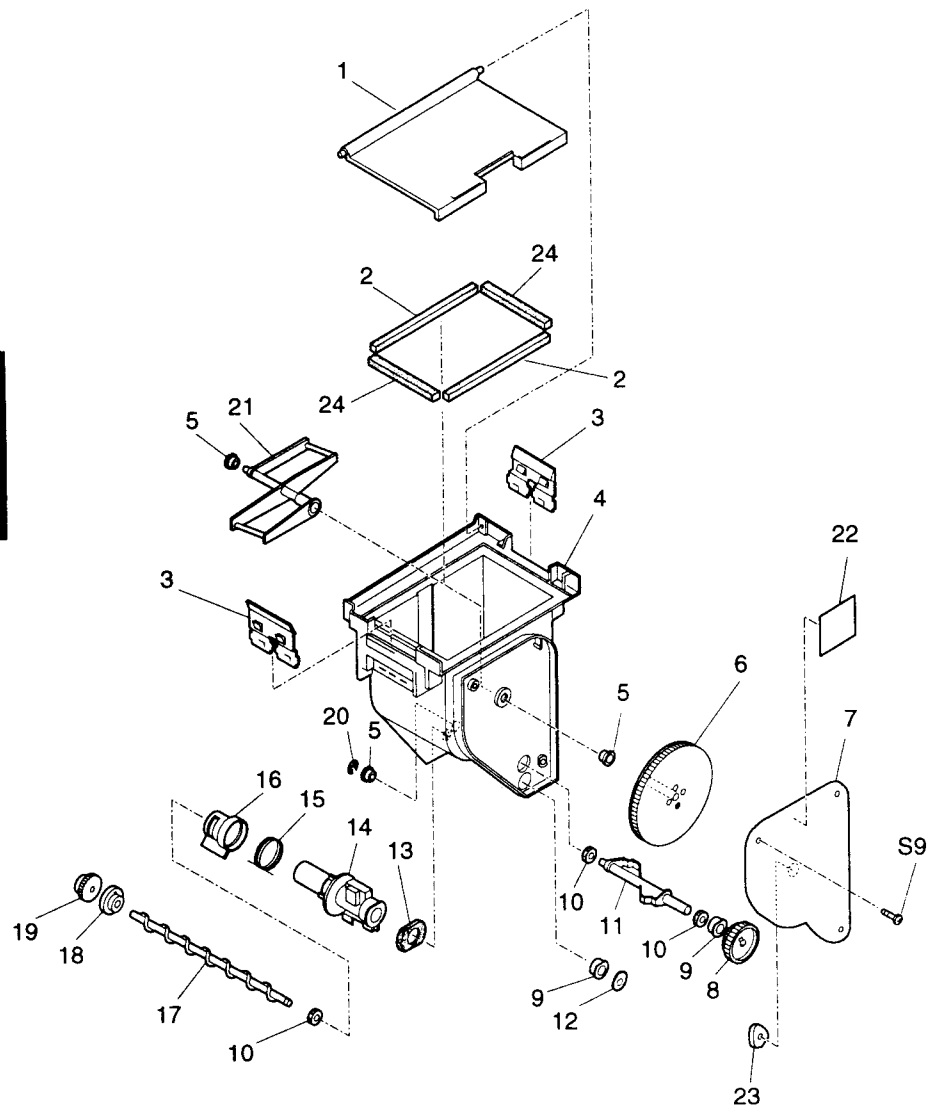
Optics



Optics, No. 5/6 Mirror

Ref. No.	Part No.	Description	Q'ty Per Unit	Common	Remarks
1	FFPKS09961	Support, No. 6 Mirror	1	C13	
2	FFPGC0183	No. 6 Mirror	1	C13	
3	FFPLQ03831	Pressure Spring	2	C13	
4	FFPKD12471	No. 6 Mirror Holder, Front	1	C13	
5	FFPXK03D80	5/6 Belt, Front Ass'y	1	C13	
6	FFPLQ03801	Pressure Spring	2	C13	
7	FFPMB0228	Pulley	2	C13	
8	FFPXK01D60	Drive Bracket, Front Ass'y	1	N	
9	FFPKQ0150	Flange	6	C13	
10	FFPMB02251	Pulley	6	C13	
11	FFPMB02261	Pulley	2	C13	
12	FFPXK02D80	5/6 Tension Plate, Front Ass'y	1	C13	
13	FFPKD12452	No. 5 Mirror Holder, Front	1	C13	
14	FFPFA0020	Shoulder Screw	2	C13	
15	FFPGC0182	No. 5 Mirror	1	C13	
16	FFPKD12481	No. 6 Mirror Holder, Rear	1	C13	
17	TLP1225	Sensor	1	C13	
18	FFPXK05D60	Drive Bracket, Rear Ass'y	1	N	
19	FFPXK06D80	5/6 Tension Plate, Rear Ass'y	1	C13	
20	FFPLP0958	Tension Spring	1	C13	
21	FFPKD12462	No. 5 Mirror Holder, Rear	1	C13	
22	FFPKE09645	Optics Unit Cover	1	C13	
23	FFPGC0184	Cover Glass	1	C13	
24	FFPKS09951	Support, No. 5 Mirror	1	C13	
25	FFPXK12D80	Connection Shaft Ass'y	1	C13	
26	FFPMQ05052	Bushing	1	C13	
27	FFPXK07D80	5/6 Belt, Rear Ass'y	1	C13	

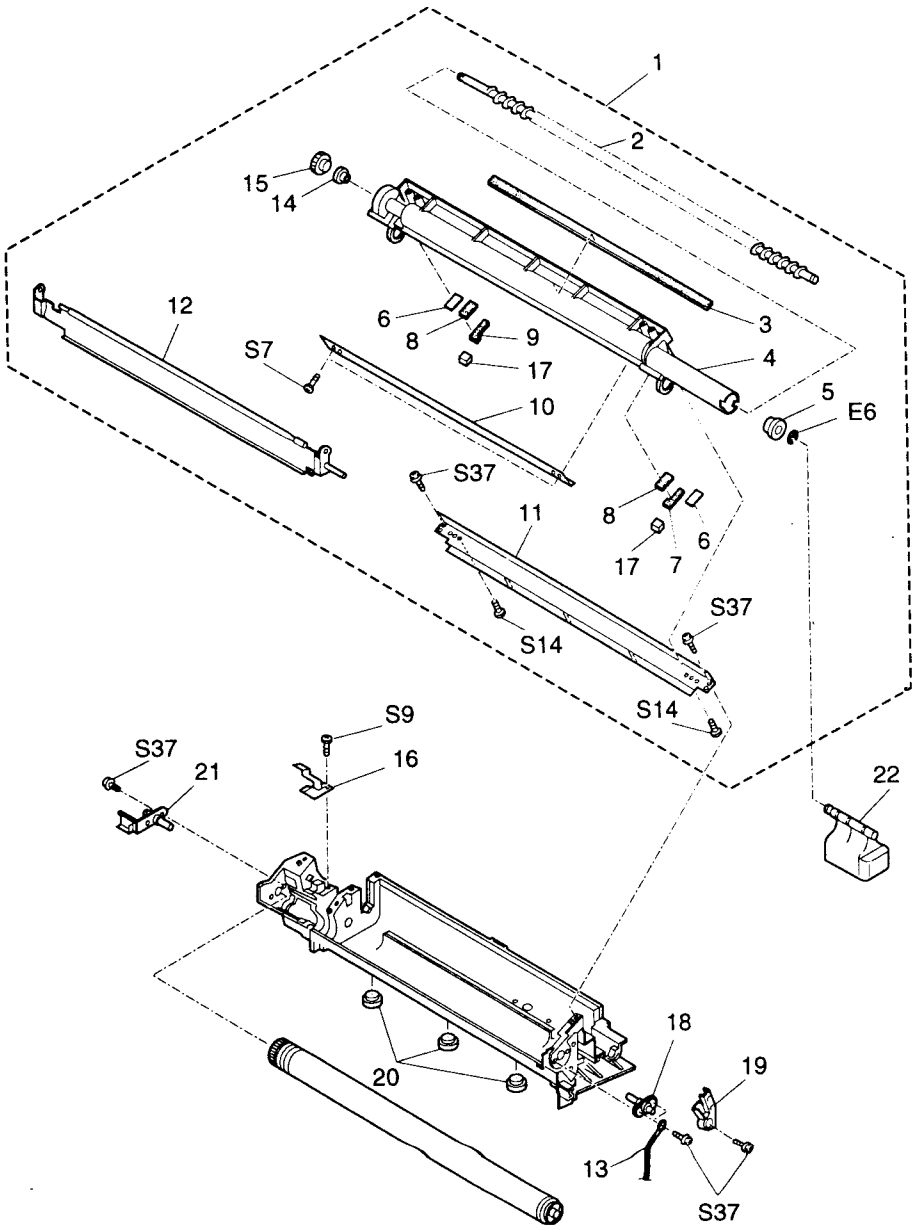
Optics



Toner Hopper Unit

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPKE0973	Inner Hopper Cover	1	C13	
2	FFPHP0785	Side Seal B	2	N	
3	FFPKF12211	Stopper	2	C13	
4	FFPKB08681	Hopper Frame	1	C13	
5	FFPMQ0376	Bushing	3	C13	
6	FFPMF0952	Gear	1	C13	
7	FFPKE09791	Gear Cover	1	C13	
8	FFPMF0953	Gear	1	C13	
9	FFPMQ0512	Bushing	2	C13	
10	FFPHP0724	Bushing Seal	3	C13	
11	FFPLG1409	Shaft	1	C13	
12	FFPMF0954	Gear	1	C13	
13	FFPHP0722	Pipe Seal	1	C13	
14	FFPHD00211	Pipe, Toner Supply	1	C13	
15	FFPLP0949	Shutter Spring	1	C13	
16	FFPKM02752	Pipe Shutter	1	C13	
17	FFPHG00451	Coil, Toner Supply	1	C13	
18	FFPMQ0513	Bushing	1	C13	
19	FFPMF0955	Coil Gear, Rear	1	C13	
20	FFPFJ0033	Touch Ring	1	C13	
21	FFPHH00781	Agitator	1	C13	
22	FFPTE2020	Label, Prohibition Waste Toner	1	C13	
23	FFPHP0733	Sponge, Gear Cover	1	C13	
24	FFPHP0784	Side Seal A	2	N	

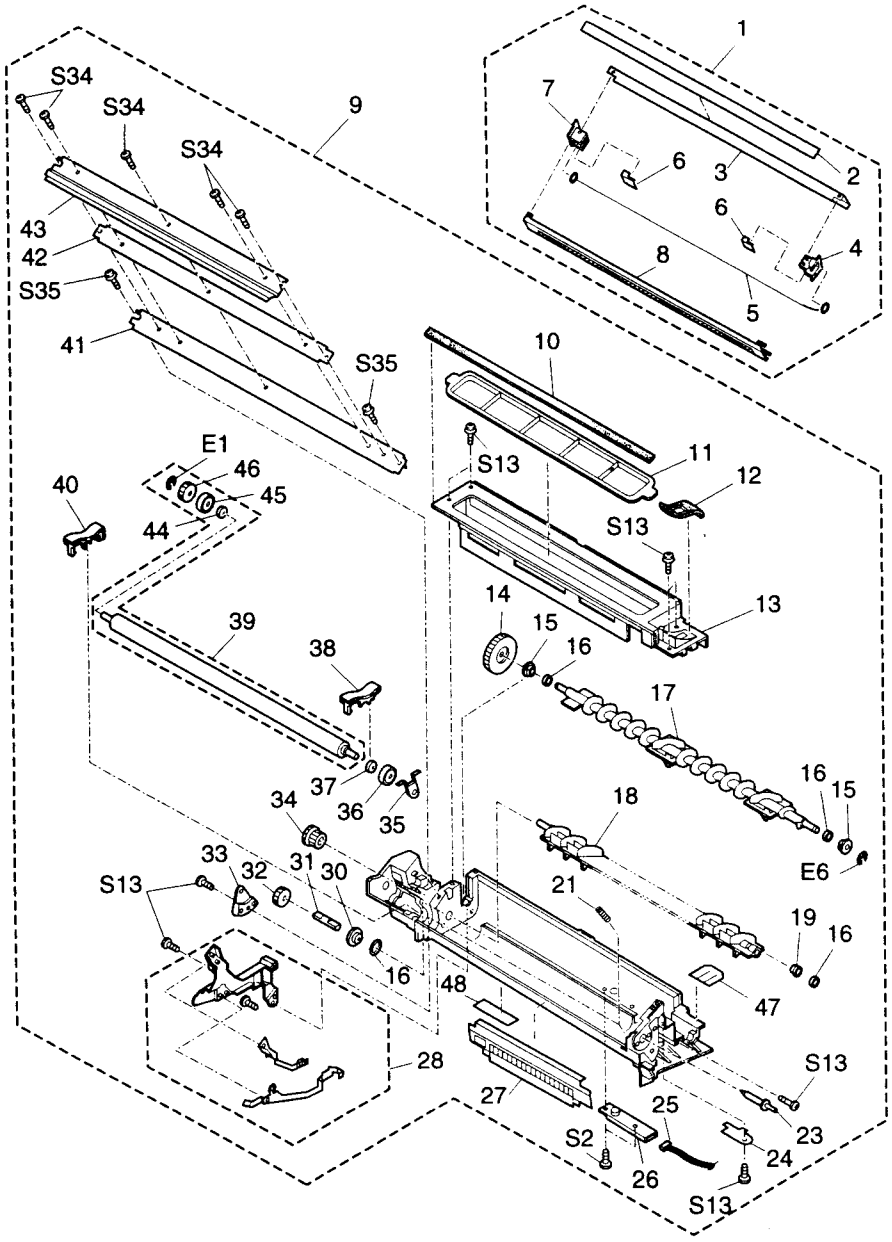
Toner Hopper Unit



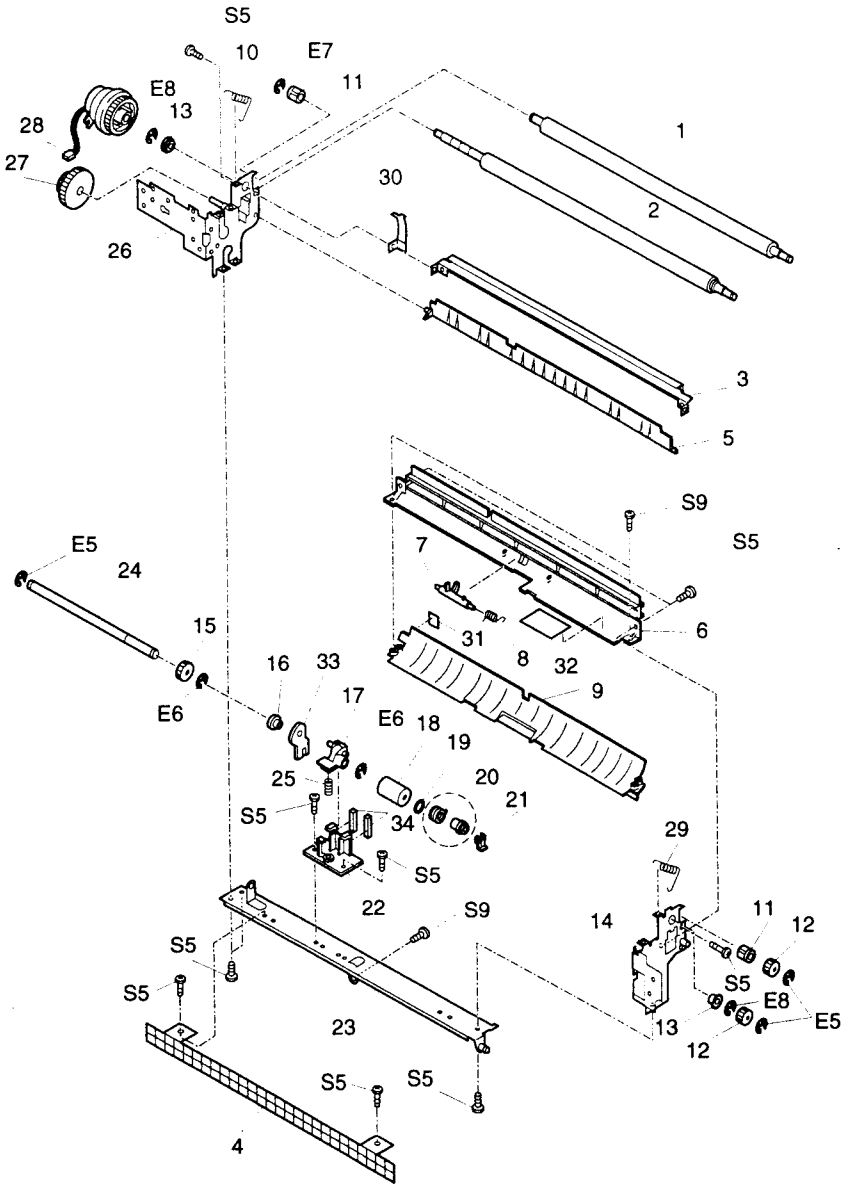
Developer Unit

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPXG10D60	Cleaning Frame Ass'y (for Taiwan)	1	N	
1	FFPXG10D61	Cleaning Frame Ass'y	1	N	
2	FFPHG0044	Recycle Coil	1	C13	
3	FFPHP0714	Seal 1	1	C13	
4	FFPKB08673	Cleaning Frame	1	C13	
5	FFPMQ0509	Bushing	1	C13	
6	FFPHP0717	Seal 4	2	C13	
7	FFPHP0716	Seal 3	1	C13	
8	FFPHP0715	Seal 2	2	C13	
9	FFPHP0719	Seal 5	1	C13	
10	FFPKD12571	Stay	1	C13	
11	FFPHK09051	Cleaning Blade	1	C13	PM
12	FFPXG14D802	Drum Cover Ass'y	1	C13	
13	FFPWC1723	TS Harness	1	C13	
14	FFPMQ0276	Bushing	1	C13	
15	FFPMF0951	Coil Gear	1	C13	
16	FFPDF02612	Grid Lead	1	C13	
17	FFPHP0730	Seal 6	2	C13	
18	FFPLG1407	Drum Shaft, Front	1	C13	
19	FFPKD1258	Discharge Holder	1	C13	
20	FFPLA0090	Cap	3	C13	
21	FFPLG14081	Drum Shaft, Rear	1	C13	
22	FFPQA0143	Waste Toner Bottle	1	C13	PM

Developer Section



Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPXG07D801	Corona No.1 Ass'y	1	C13	
2	FFPHK0908	Blind Sheet	1	C13	
3	FFPJA0270	Frame, No.1 Corona	1	C13	
4	FFPKQ01581	Corona Block 1	1	C13	
5	FFPEY00641	Corona Wire	1	C13	PM
6	FFPJA0271	Corona Cover 1	2	C13	
7	FFPXG06D80	Corona Block 2	1	C13	
8	FFPKQ0160	Corona Grid	1	C13	
9	FFPXG12D87	Developer Unit Ass'y (for Taiwan)	1	C13	
9	FFPXG12D811	Developer Unit Ass'y	1	C13	
10	FFPHP0718	Seal, Frame Cover	1	C13	
11	FFPQF0033	Cap	1	C13	
12	FFPHP07132	Hopper Seal	1	C13	
13	FFPKE09711	Frame Cover	1	C13	
14	FFPMF0949	Transfer Gear	1	C13	
15	FFPMQ0166	Bushing	2	C13	
16	FFPHP05531	G Seal	4	C13	
17	FFPHG00431	Supply Coil	1	C13	
18	FFPKS10012	String Paddle	1	C13	
19	FFPMQ0510	Bushing	1	C13	
20		==Not used==			
21	FFPLP0948	Pressure Spring	2	C13	
22		==Not used==			
23	FFPLG1406	Paddle Shaft 2	1	C13	
24	FFPKE0969	Sensor Cover	1	C13	
25	FFPWC1551	TDC Harness	1	C13	
26	TS0524ANA71C	TDC Sensor	1	C13	
27	FFPXG11D801	Cover Ass'y	1	C13	
28	FFPXG08D801	Terminal Case Ass'y	1	C13	
29		==Not used==			
30	FFPMQ0166	Bushing	1	C13	
31	FFPLG1405	Paddle Shaft 1	1	C13	
32	FFPMF0948	Gear, Paddle	1	C13	
33	FFPMQ0508	Bushing	1	C13	
34	FFPMF0950	Gear, Idle 1	1	C13	
34	FFPMF0974	Gear, Idle 1 (for Taiwan)	1	C13	
35	FFPKQ01531	Support, Magnetic Pole	1	C13	
36	FFPHQ00441	Spacer Ring, Front	1	C13	
36	FFPHQ0047	Spacer Ring, Front (for Taiwan)	1	C13	
37	FFPHQ0045	Bushing	1	C13	
38	FFPKQ01632	Magnetic Roller Stopper, Front	1	C13	
39	FFPXG02D801	Magnetic Roller Ass'y (for Taiwan)	1	C13	
39	FFPXG02D81	Magnetic Roller Ass'y	1	C13	
40	FFPKQ01642	Magnetic Roller Stopper, Rear	1	C13	
41	FFPKD1265	Blade Stay	1	C13	
42	FFPHK0904	Doctor Blade	1	C13	
43	FFPKE0968	Cover, Toner Dispersion	1	C13	
44	FFPMQ0507	Bearing	1	C13	
45	FFPHQ00431	Spacer Ring, Rear	1	C13	
45	FFPHQ0048	Spacer Ring, Rear (for Taiwan)	1	C13	
46	FFPMF0947	Magnetic Roller Gear	1	C13	
46	FFPMF0973	Magnetic Roller Gear (for Taiwan)	1	C13	
47	FFPHK09111	Mylar	1	C13	
48	FFPHK09141	Sheet	1	C13	



Paper Feed Section

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPMA0600	Registration Roller (Rubber)	1	C13	
2	FFPMA0598	Registration Roller (Steel)	1	N	
3	FFPXF18D804	Cleaning Pad Ass'y	1	C13	
4	FFPKF12481	Paper Guide 2 (FP-7715)	1	C15	
5	FFPKF1229	Flapper Plate	1	C13	
6	FFPKF12282	Paper Guide 3	1	C13	
7	FFPLL05382	Sensor Lever	1	C13	
8	FFPLR02582	Spring	1	C13	
9	FFPKF12271	Paper Guide 2	1	C13	
10	FFPLP09521	Pressure Spring	1	C13	
11	FFPMQ0515	Bushing	2	C13	
12	FFPMF0724	Gear, Registration Roller	2	C13	
13	FFPMQ04511	Bushing (FP-7713)	2	C13	
13	FFPMQ0517	Bearing (FP-7715)	2	C15	
14	FFPKB08732	Front Frame, Bypass	1	C13	
15	FFPMF09661	Gear, DFP Shaft	1	C13	
16	FFPMQ0521	Bushing	1	C13	
17	FFPLK0310	DFP Arm	1	C13	
18	FFPMA0520	DFP Roller	1	C13	PM
19	FFPMV0044	Polyslider	1	C13	
20	FFPXF21D80	Torque Limiter Ass'y	1	C13	PM
21	FFPFJ0033	Touch Ring	1	C13	
22	FFPKD12623	DFP Holder	1	C13	
23	FFPKD1272	DFP Stay	1	C13	
24	FFPLG1416	DFP Shaft	1	C13	
25	FFPLP09531	Pressure Spring	1	C13	
26	FFPXF11D80	Rear Frame, Bypass	1	C13	
26	FFPXF11D81	Rear Frame, Bypass (for North America)	1	C13	
27	FFPMF09591	Gear, Idle 39T/26T	1	C13	
28	BJ-3.5-W03	Magnetic Clutch Ass'y (FP-7713)	1	N	
28	BJ-3.5-W04	Magnetic Clutch 2 Ass'y (FP-7715)	1	N	
29	FFPLP1058	Pressure Spring	1	N	
30	FFPLQ0402	Cover Terminal	1	C13	
31	FFPHP06511	Seal 10	1	C13	
32	FFPKS1021	Plate, Anti-vibration	1	C13	
33	FFPKF1236	Stopper, DFP Roller Shaft	1	C13	
34	FFPKP00781	Pad 2	2	C13	

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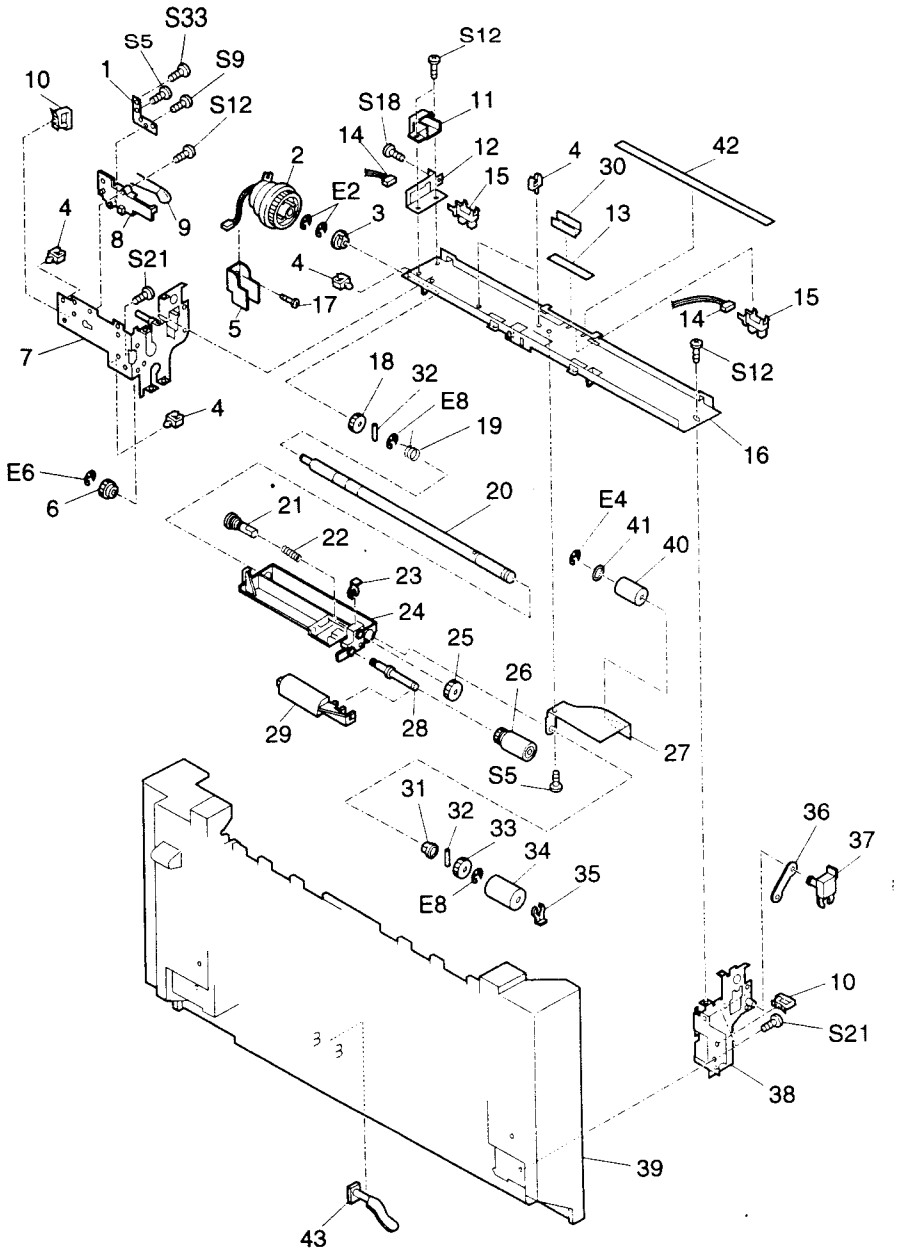
Paper Feed Section



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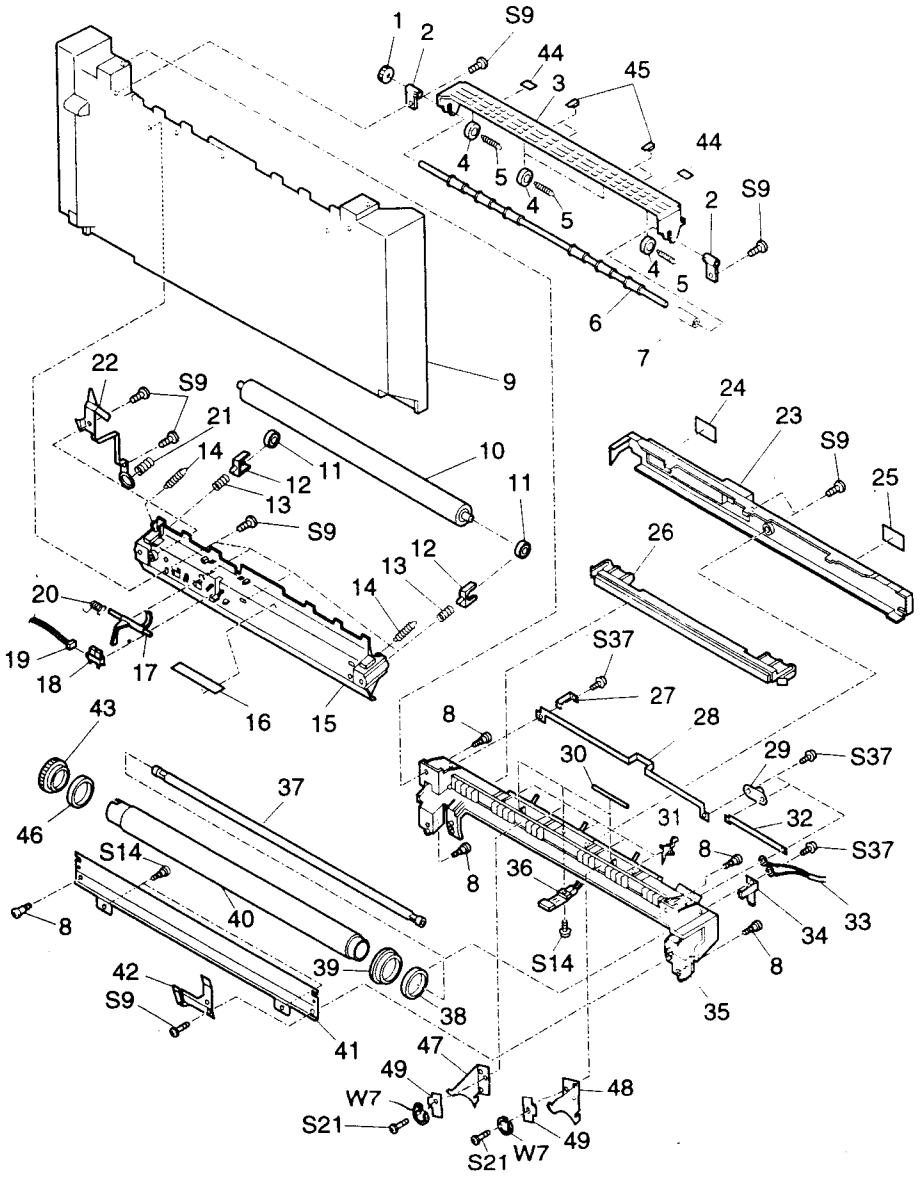
Paper Feed Section

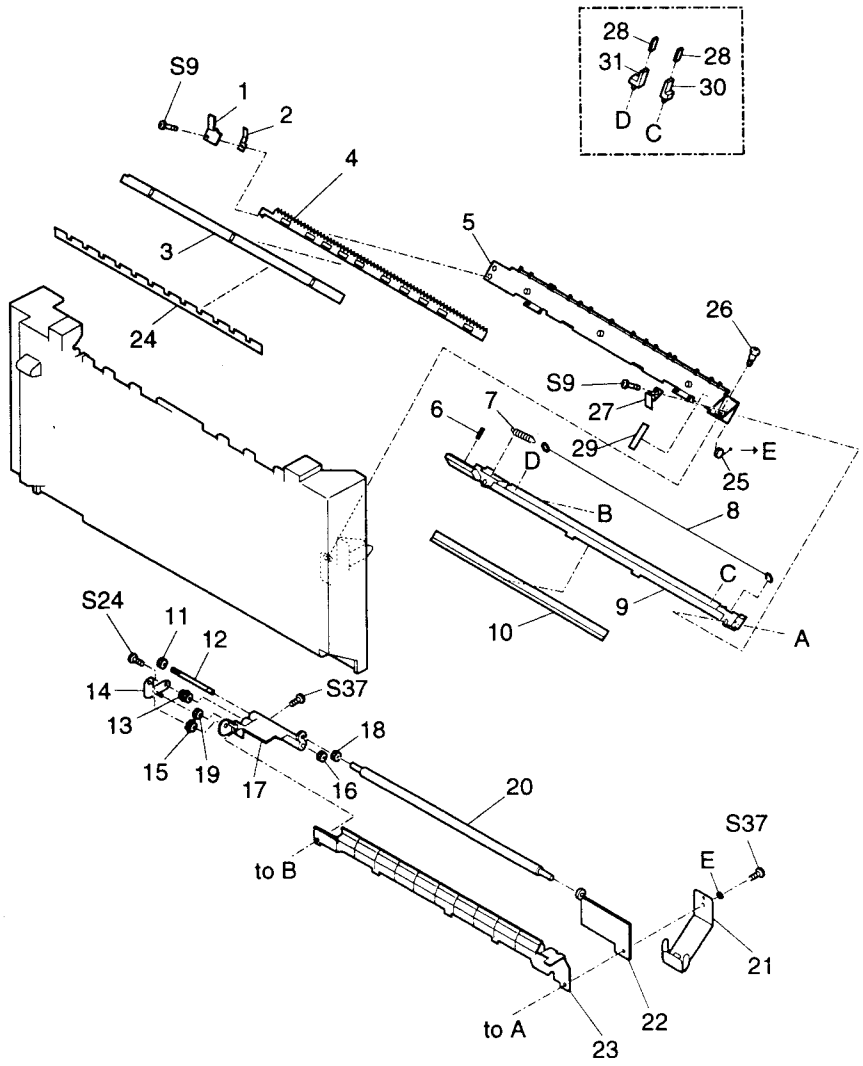
Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
0	FFPUF01D63	Left Cover Ass'y (FP-7713 for others)	1	N	
0	FFPUF01G43	Left Cover Ass'y (FP-7715 for others)	1	N	
0	FFPUF01D67	Left Cover Ass'y (FP-7113 for Taiwan)	1	N	
0	FFPUF01G47	Left Cover Ass'y (FP-7115 for Taiwan)	1	N	
0	FFPUF01D61	Left Cover Ass'y (FP-7713 for North America)	1	N	
0	FFPUF01G41	Left Cover Ass'y (FP-7715 for North America)	1	N	
1	FFPDF0263	Ground Plate	1	C13	
2	BJ-3.5-W03	Magnetic Clutch Ass'y (FP-7713)	1	N	
2	BJ-3.5-W04	Magnetic Clutch 2 Ass'y (FP-7715)	1	N	
3	FFPMQ0516	Bushing	1	C13	
4	UAMS05S2	Clamp	5	C13	
5	FFPKF13731	Clutch Stopper 1	1	N	
6	FFPMF0787	Idle Gear	1	C13	
7	FFPKB08771	Rear Frame, Paper Feed	1	C13	
8	FFPKH0303	Insulation Spacer	1	C13	
9	ERZV10D751	ZNR	1	C13	
10	LWS1S	LWS	2	C13	
11	FFPJA0277	Harness Guide	1	C13	
12	FFPKU01631	Support	1	C13	
13	FFPKP0081	Cleaning Pad (FP-7713)	1	C13	
13	FFPKP00741	Cleaning Pad (FP-7713)	1	C15	
14	FFPWC1572	KB Harness (FP-7715)	1	C13	
14	FFPWC1545	KB Harness (FP-7713)	1	C13	
15	TLP1225	Sensor (FP-7713)	1	C13	
15	TLP1225	Sensor (FP-7715)	2	C13	
16	FFPKD12611	Roller Stay, Paper Feed	1	C13	
17	FFPFA0151	Shoulder Screw	1	N	
18	FFPMF0965	Gear, DFP Drive 16T	1	C13	
19	FFPLR0257	Spring	1	C13	
20	FFPLG15731	Paper Feed Shaft 3	1	N	
21	FFPMD0026	Boss	1	C13	
22	FFPLR02562	Spring	1	C13	
23	FFPFJ0033	Touch Ring	1	C13	
24	FFPKR16611	Bracket, Pick up Roller	1	C13	
25	FFPMF0960	Gear, Pick up Idle	1	C13	
26	FFPMA0521	Pick up Roller	1	C13	PM
27	FFPKS1020	Bracket, Paper Feed Roller	1	C13	
28	FFPLG1418	Pick up Roller Shaft	1	C13	
29	FFPKD12641	Finger Support	1	C13	
30	FFPKN03731	Cleaning Pad	1	C13	
31	FFPMQ0383	Bushing	1	C13	
32	XPJ2D10WV	Pin	2	C13	
33	FFPMF0958	Gear, Pick up Drive	1	C13	
34	FFPMA0518	Paper Feed Roller	1	C13	PM
35	FFPFJ0039	Touch Ring	1	C13	
36	FFPLK0312	Tray Arm 2 (except North America)	1	C13	
37	FFPLK03111	Tray Arm 1 (except North America)	1	C13	
38	FFPKB08732	Front Frame, Bypass	1	C13	
39	FFPNA05675	Left Cover ⚠	1	C13	
40	FFPMQ0400	Roller Clutch	1	C13	
41	FFPMV0004	Polyslider	1	C13	
42	FFPKP0081	Cleaning Pad	1	C13	
43	FFPLL05481	Sensor Lever (FP-7715)	1	C13	

Paper Feed Section

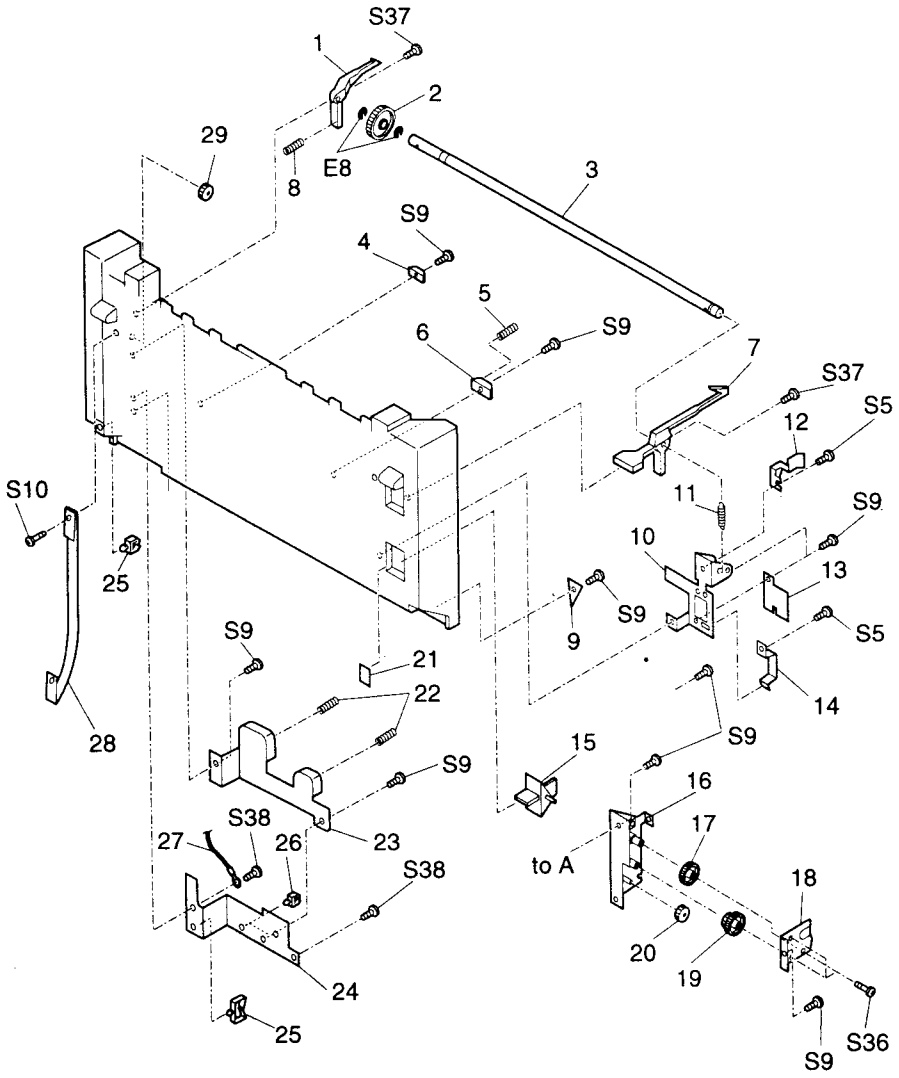


Fuser Section

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPMF0946	Gear, Exit Roller	1	C13	
2	FFPMQ0506	Bushing	2	C13	
3	FFPKF12202	Guide 1	1	C13	
4	FFPMA05151	Exit Roller 2	4	C13	
5	FFPLP09461	Roller Spring	4	C13	
6	FFPMA05142	Exit Roller	1	C13	
7	FFPLT0121	Holder, Exit Roller 2	1	C13	
8	FFPFA0138	Shoulder Screw	5	C13	
9	FFPNA05675	Left Cover ⚠	1	C13	
10	FFPMA0523	Pressure Roller	1	C13	PM
11	FFPMQ0520	Bearing	2	C13	
12	FFPMQ0518	Bearing Holder	2	C13	
13	FFPLP09551	Pressure Spring	2	C13	
14	FFPLP09471	Spring	2	C13	
15	FFPLF01763	Heat-insulating Cover	1	C13	
16	FFPDU0064	Discharge Brush	1	C13	
17	FFPLK0306	Sensor Arm	1	C13	
18	TLP1225	Sensor	1	C13	
19	FFPWC1536	SHPS Harness	1	C13	
20	FFPLR0252	Spring	1	C13	
21	FFPLP09432	Pressure Spring 1	1	C13	
22	FFPDF02572	Ground Terminal	1	C13	
23	FFPKE09783	Fuser Cover	1	C13	
24	FFPTE1677	Caution Label, High Temperature	1	C13	
25	FFPTE19342	Label, Paper Jam	1	C13	
26	FFPKM02785	Cleaning Pad	1	C13	PM
27	FFPDF0267	Bracket, Lamp Terminal 2	1	C13	
28	FFPDF0266	Electric Plate 2	1	C13	
29	FFPET0014	Thermostat	1	C13	
30	FFPLN0005	Finger Spring	2	C13	
31	FFPLK0336	Finger	4	N	PM
32	FFPDF0265	Electric Plate 1	1	C13	
33	FFPWC1554	FU Harness ⚠	1	C13	
34	FFPDF0264	Bracket, Lamp Terminal 1	1	C13	
35	FFPKB087211	Fuser Frame	1	N	
36	FFPBL0013	Thermistor ⚠	1	C13	PM
37	H12V1KWN1A	Lamp (for North America/Taiwan) ⚠	1	C13	PM
37	H22V1KWN1A	Lamp (except North America/Taiwan) ⚠	1	C13	PM
38	FFPMQ0523	Bearing	1	C13	
39	FFPMQ0524	Bushing	1	N	
40	FFPMA05242	Heat Roller	1	C13	PM
41	FFPKF12311	Front Guide	1	C13	
42	FFPDF02682	Ground Plate	1	C13	
43	FFPMF09611	Gear, Heat Roller	1	C13	
44	FFPHK1006	Sheet	2	N	
45	FFPKN0340	Paper Exit Rubber (for Taiwan/China)	4	C13	
46	FFPMQ0529	Bushing	1	C13	
47	FFPKF12502	Rib 1 (for Taiwan/China)	1	C13	
48	FFPKF12512	Rib 2 (for Taiwan/China)	1	C13	
49	FFPKD12982	Plate (for Taiwan/China)	2	C13	



Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
0	FFPXF10D611	Corona No. 2/3 Ass'y	1	N	PM
0	FFPXF10D67	Corona No. 2/3 Ass'y (for Taiwan)	1	N	PM
1	FFPKD12561	Plate, Discharge Needle	1	C13	
2	FFPDF0256	Terminal 2	1	C13	
3	FFPHK0903	Mylar, Discharge Needle	1	C13	
4	FFPKS1000	Discharge Needle	1	C13	
5	FFPKD12556	Holder, Discharge Needle	1	C13	
6	FFPLP0944	Spring	1	C13	
7	FFPLP09451	Tension Spring	1	C13	
8	FFPEY00641	Corona Wire	1	C13	PM
9	FFPXF09D802	Corona No.2/3 Frame Ass'y (for Taiwan)	1	C13	
9	FFPXF09D803	Corona No.2/3 Frame Ass'y	1	C13	
10	FFPHK09091	Mylar	1	C13	
11	FFPMF0968	Gear 2	1	C13	
12	FFPLG1428	Gear Shaft	1	C13	
13	FFPMF0970	Gear 4	1	C13	
14	FFPKM02821	Gear Stopper	1	C13	
15	FFPMF0972	Gear 6	1	C13	
16	FFPMF09691	Gear 3	1	C13	
17	FFPKQ01652	Gear Case	1	C13	
18	FFPMF0967	Gear 1	1	C13	
19	FFPMF0971	Gear 5	1	C13	
20	FFPMA05252	Roller	1	C13	
21	FFPLQ0439	Earth Plate (for Taiwan)	1	C13	
22	FFPMQ05221	Roller Plate	1	C13	
23	FFPKF12192	Front Guide	1	C13	
24	FFPHK09241	Guide Mylar	1	C13	
25	FFPWL0007	ZNR Ass'y (except Taiwan)	1	N	
26	FFPFA0113	Shoulder Screw	1	C13	
27	FFPLQ0443	Earth Plate	1	C13	
28	FFPKN0380	Rubber Anti-vibration (except Taiwan)	2	C13	
29	FFPHK1006	Sheet (except Taiwan)	1	C13	
30	FFPJA0313	Rubber Holder, Front (except Taiwan)	1	C13	
31	FFPJA0312	Rubber Holder, Rear (except Taiwan)	1	C13	



Left Cover Ass'y

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPLL05415	Latch 2	1	C13	
2	FFPMF0941	Gear, Fuser Idle	1	C13	
3	FFPLG1423	Shaft, Open/Close	1	C13	
4	FFPKA0150	Support 2	1	C13	
5	FFPLP09432	Pressure Spring 1	1	C13	
6	FFPKA0149	Support 1	1	C13	
7	FFPLL05402	Latch 1	1	C13	
8	FFPLP0956	Spring	1	C13	
9	FFPLQ03981	Pressure Spring	1	C13	
10	FFPLK03031	Bracket, Open/Close Arm Front	1	C13	
11	FFPLP0957	Ground Spring	1	C13	
12	FFPKE0983	Safety Cover	1	C13	
13	FFPKK0053	Harness Cover	1	C13	
14	FFPLQ0393	Spring	1	C13	
15	FFPLA0089	Switch Knob	1	C13	
16	FFPKR16572	Bracket 2	1	C13	
17	FFPMF0943	Gear, Idle	1	C13	
18	FFPKR1659	Hold Plate	1	C13	
19	FFPMF07501	Gear, Idle 33T/16T	1	C13	
20	FFPMF0883	Gear, Idle 2	1	C13	
21	FFPTE1950	Label, Power Indication	1	C13	
22	FFPLP0944	Spring	2	C13	
23	FFPDA00294	Base	1	C13	
24	FFPDF02581	Ground Plate	1	C13	
25	LWS1S	LWS	2	C13	
26	UAMS05S2	Clamp	2	C13	
27	FFPWC1555	KBE Harness ⚠	1	C13	
28	FFPKM02791	Tray Belt	1	C13	
29	FFPMF09401	Gear, Idle 4	1	C13	

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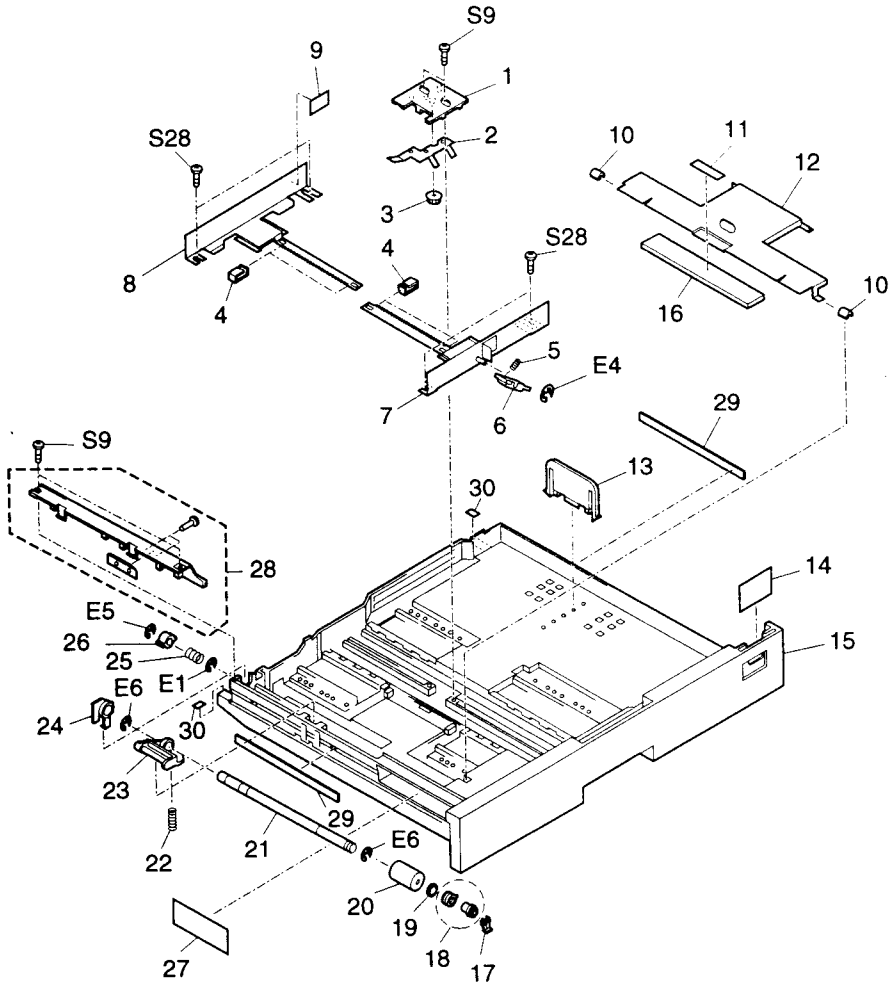
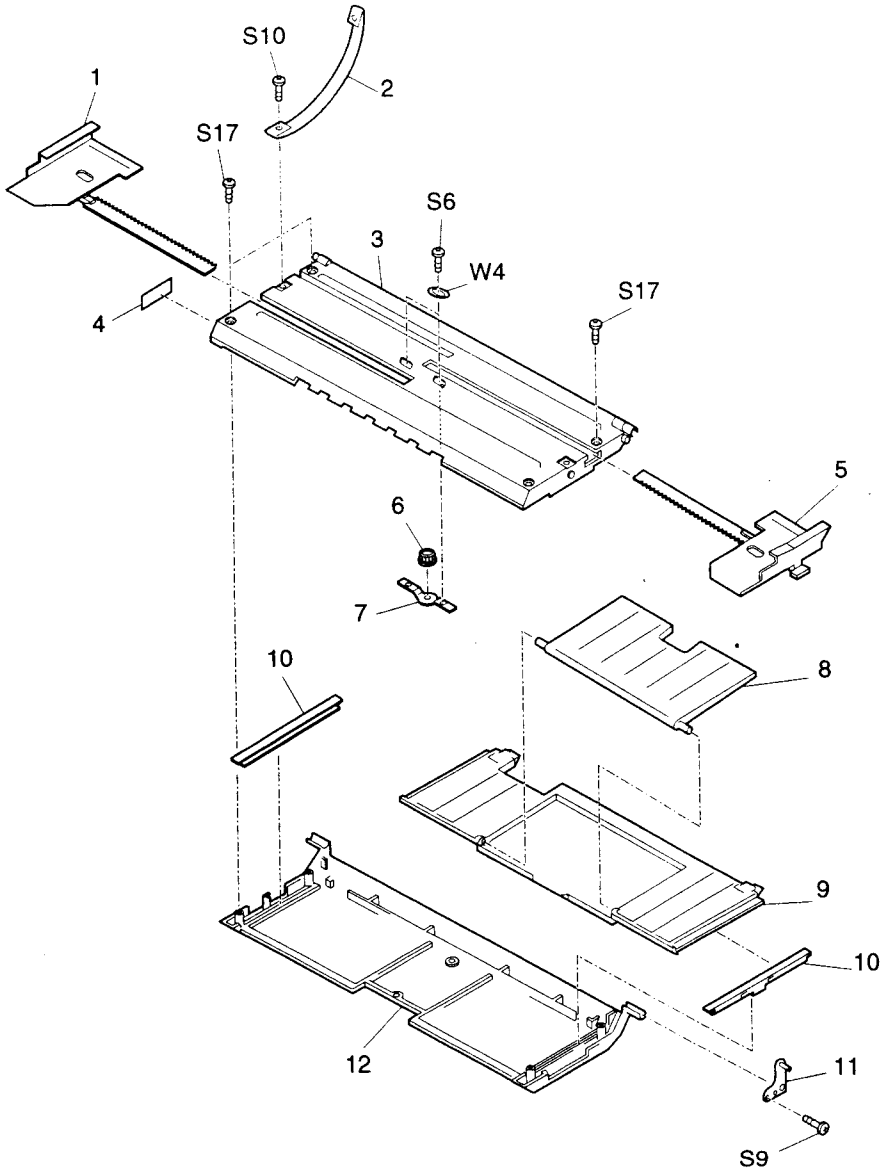


250 Sheet Paper Tray (Copier and FA-DS16)

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
0	FFPUC01D60	Cassette Ass'y (FP-7713 for Taiwan)	1	N	
0	FFPUC01G40	Cassette Ass'y (FP-7715/FA-DS16 for Taiwan)	1	N	
0	FFPUC01D61	Cassette Ass'y (FP-7713 for North America)	1	N	
0	FFPUC01G41	Cassette Ass'y (FP-7715/FA-DS16 for North America)	1	N	
0	FFPUC01D63	Cassette Ass'y (FP-7713 for others)	1	N	
0	FFPUC01G43	Cassette Ass'y (FP-7715/FA-DS16 for others)	1	N	
1	FFPKS10041	Adjusting Plate	1	C13	
2	FFPLQ03961	Spring	1	C13	
3	FFPMF0829	Pinion Gear	1	C13	
4	FFPKM0277	Rack Guide	4	C13	
5	FFPLP09541	Release Spring	1	C13	
6	FFPLL05371	Release Lever	1	C13	
7	FFPQG00792	Paper Guide, Front	1	C13	
8	FFPQG00731	Paper Guide A, Rear	1	C13	
9	FFPTE1949	Label, Paper Overfill	1	C13	
10	FFPFG0463	Fulcrum Pin	2	C13	
11	FFPKM0293	Pad	1	C13	
12	FFPQG00751	Bottom Plate	1	C13	
13	FFPQG00781	Paper Guide, Rear	1	C13	
14	FFPPA0417	Paper Size Plate (for Taiwan)	1	N	
14	FFPPA0418	Paper Size Plate (for North America)	1	N	
14	FFPPA0419	Paper Size Plate (Others)	1	N	
15	FFPQA014113	Main Frame	1	C13	
16	FFPHL0013	Cushion	1	C13	
17	FFPFJ0033	Touch Ring	1	C13	
18	FFPXC07D80	Cassette Boss Ass'y	1	C13	PM
19	FFPMV0044	Polyslider	1	C13	
20	FFPMA0517	DFP Roller	1	C13	PM
21	FFPLG14153	DFP Roller Shaft	1	C13	
22	FFPLP09514	Pressure Spring	1	C13	
23	FFPLK03081	DFP Arm	1	C13	
24	FFPMQ05141	Bushing	1	C13	
25	FFPLP0871	Pressure Spring	1	C13	
26	FFPHQ0046	Bushing	1	C13	
27	FFPKF1246	Paper Guide 5 (FP-7715)	1	C13	
28	FFPXC06D802	DFP Guide Plate Ass'y	1	C13	
29	FFPHK0930	Slide Sheet 2	2	C13	
30	FFPKM0281	Slider	2	C13	

250 Sheet Paper Tray



Sheet Bypass Tray

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
0	FFPXF03D60	Sheet Bypass Ass'y	1	C13	
1	FFPQG0077	Paper Guide B, Rear	1	C13	
2	FFPKM02791	Tray Belt	1	C13	
3	FFPQB00401	Tray (1), Sheet Bypass	1	C13	
4	FFPKE0891	Stopper Cover	1	C13	
5	FFPQG0076	Paper Guide B, Front	1	C13	
6	FFPMF0829	Pinion Gear	1	C13	
7	FFPKS10081	Adjusting Plate	1	C13	
8	FFPQB00421	Tray B, Sheet Bypass	1	C13	
9	FFPQB0041	Tray A, Sheet Bypass	1	C13	
10	FFPKF1230	Rail, Bypass Tray	2	C13	
11	FFPKS1012	Plate	1	C13	
12	FFPKE0975	Tray Cover, Bypass	1	C13	

Sheet Bypass Tray

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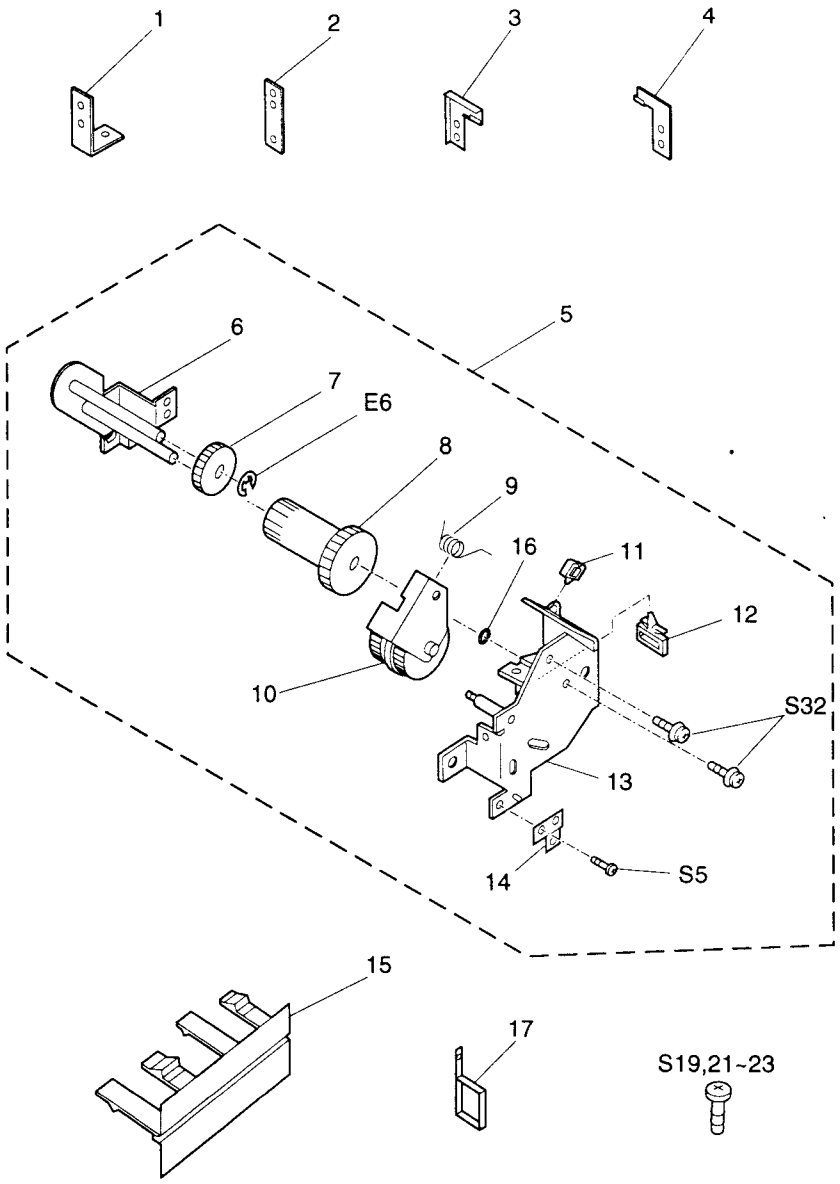

FA-DS16 Mounting Kit

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPKS1027	Fixing Bracket 1	1	C15	
2	FFPKS1041	Fixing Bracket 2	1	C15	
3	FFPKS10291	Fixing Bracket 3	1	C15	
4	FFPKS10231	Fixing Bracket 4	1	C15	
5	FFPXQ08G00	Drive Block Ass'y	1	C15	
6	FFPXQ16G00	Bracket, Drive Gear 2	1	C15	
7	FFPMF0979	Gear 1	1	C15	
8	FFPMF0980	Gear 2	1	C15	
9	FFPLR0260	Spring, Gear Arm	1	C15	
10	FFPXQ07G00	Gear Arm Ass'y	1	C15	
11	UAMS05S2	Clamp	1	C	
12	LWS1NS	LWS	1	C	
13	FFPKR1677	Bracket, Drive Gear 1	1	C15	
14	FFPLQ04121	Ground Spring	1	C15	
15	FFPKS10281	Blind Plate	2	C15	
16	FFPMV0004	Polyslider	1	C	
17	LWS2H	LWS	1	N	

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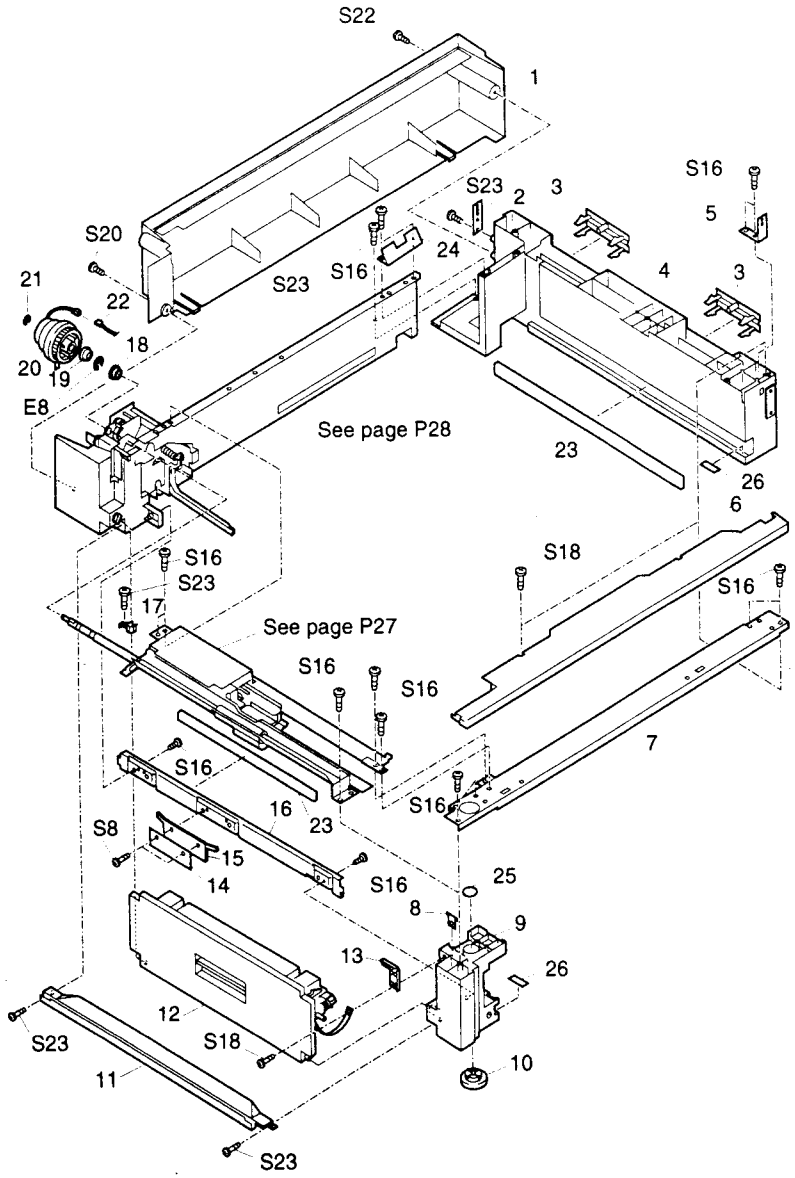

FA-DS16 Frame

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPNA05971	Rear Cover	1	C15	
2	FFPKS1041	Fixing Bracket 2	1	C15	
3	FFPKS10281	Blind Plate	2	C15	
4	FFPKB08843	Frame, Right	1	C15	
5	FFPKS1027	Fixing Bracket 1	1	C15	
6	FFPNA05982	Front Cover	1	C15	
7	FFPKD1285	Stay, Front	1	C15	
8	FFPFF00721	Nut	1	C15	
9	FFPKB08851	Frame, Left (Front)	1	C15	
10	FFPNM0028	Foot	1	C15	
11	FFPKD12592	Lift Stay	1	C15	
12	FFPXQ06G00	Paper Feed Door Ass'y	1	C15	
13	FFPKS1023	Fixing Bracket 4	1	C15	
14	FFPKU01743	Support Plate	1	C15	
15	FFPKS1026	Plate, Releasing DFP	1	C15	
16	FFPKD1288	Cassette Stay	1	C	
17	FFPLQ0413	Ground Spring 2	1	C	
18	FFPMQ0517	Bearing	1	C15	
19	FFPLH03171	Gear Spacer	1	C15	
20	BJ-3.5-W03	Magnet Clutch 2	1	N	
21	FFPFJ0033	Touch Ring	1	C15	
22	FFPWC15741	KU Harness	1	C15	
23	FFPHK0932	Slide Sheet	2	C15	
24	FFPKS1042	Plate	1	C15	
25	FFPKH0319	Spacer	1	C15	
26	FFPKM0281	Slider	2	C15	

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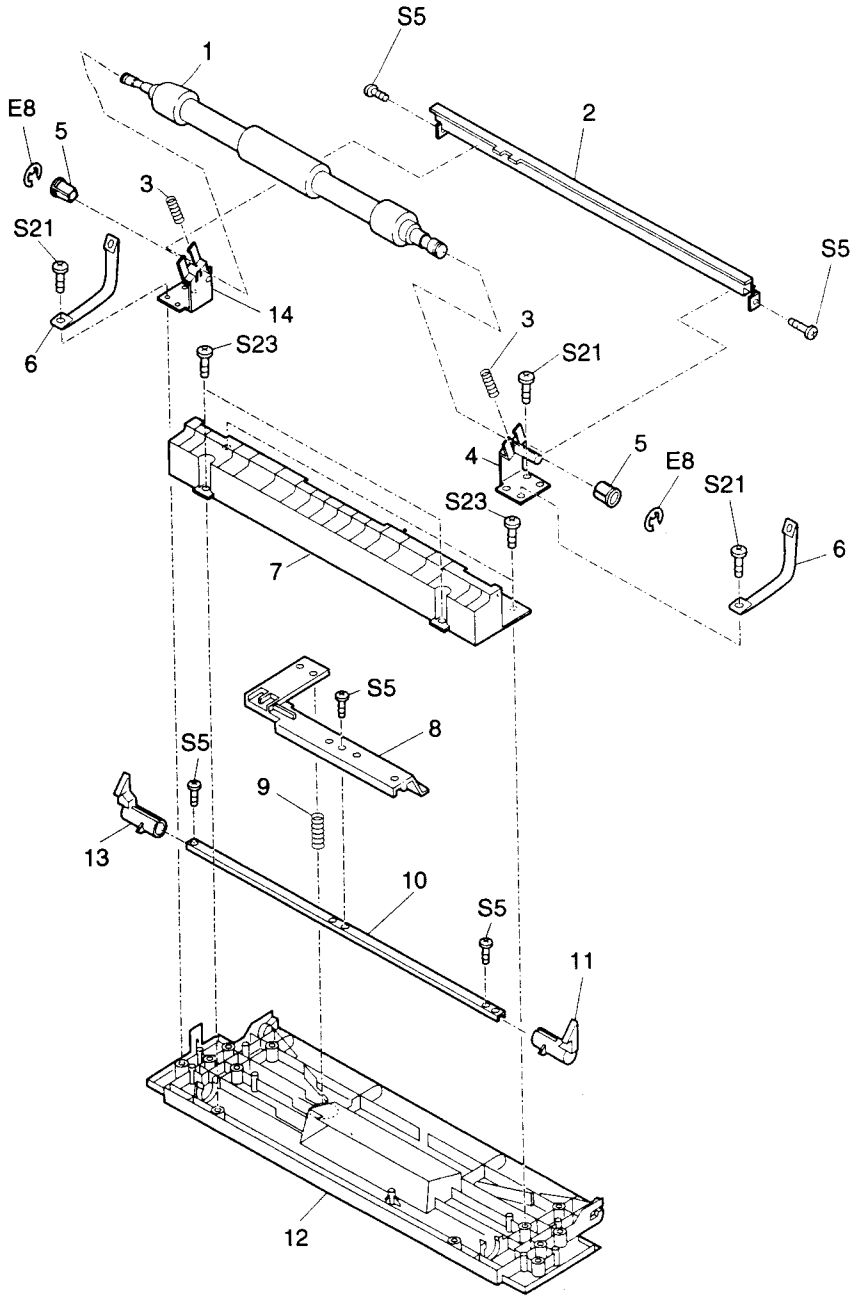

FA-DS16 Paper Feed Door Ass'y

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPMA0528	Registration Roller 2	1	C15	
2	FFPKF1244	Paper guide 4	1	C15	
3	FFPLP0964	Pressure Spring	2	C15	
4	FFPXG14G00	Bracket, Registration Roller (Front)	1	C15	
5	FFPMQ0515	Bushing	2	C15	
6	FFPKM0288	Band	2	C15	
7	FFPKF12431	Paper guide 3	1	C15	
8	FFPLL04147	Lock Lever	1	C15	
9	FFPLP0851	Spring, Lock Lever	1	C15	
10	FFPKD11261	Shaft, Lock Lever	1	C15	
11	FFPLL0545	Latch, Front	1	C15	
12	FFPNA05962	Paper Feed Door	1	C15	
13	FFPLL0546	Latch, Rear	1	C15	
14	FFPXG15G00	Bracket, Registration Roller (Rear)	1	C15	

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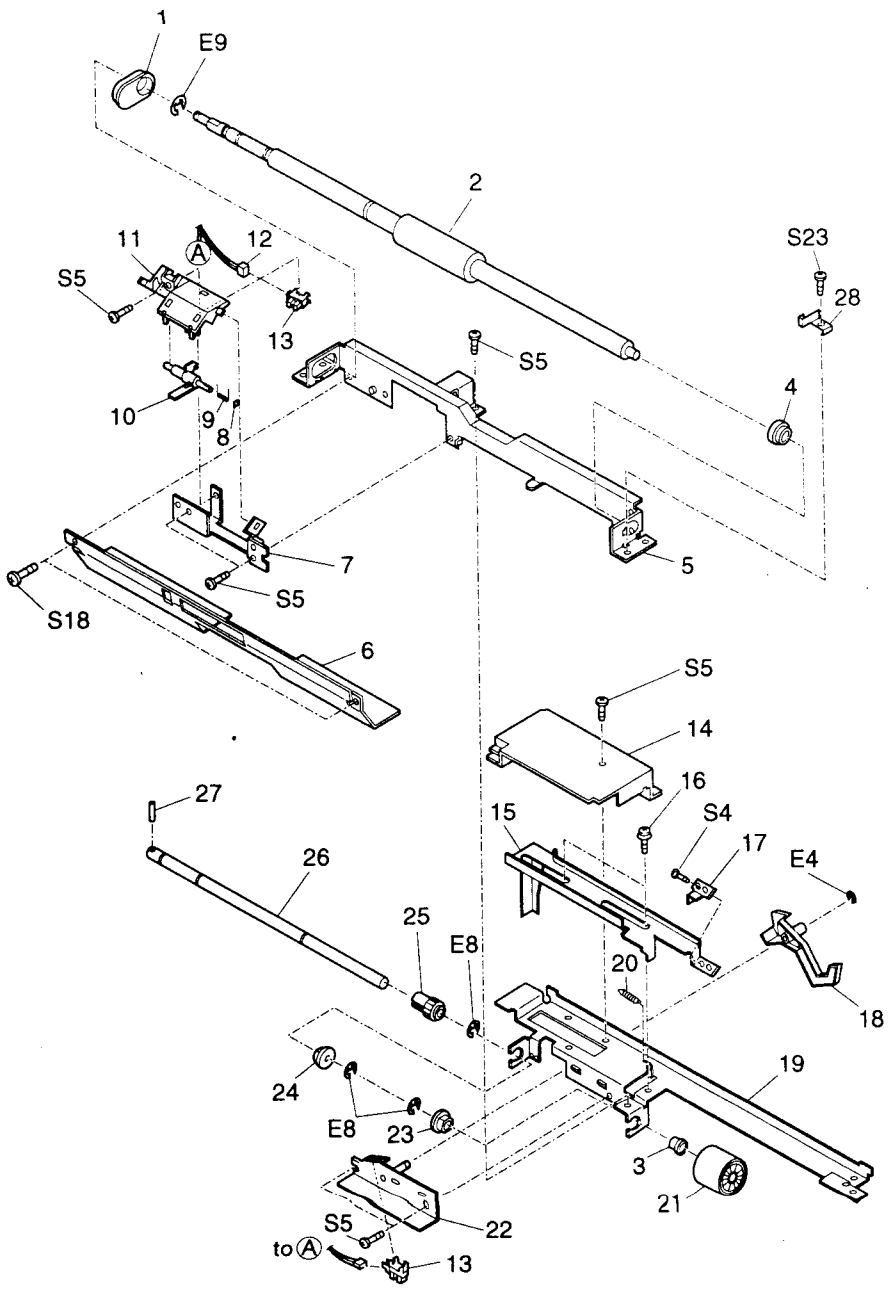

FA-DS16 Paper Feed Section

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPMQ05301	Bushing	1	C	
2	FFPMA0599	Registration Roller	1	N	
3	FFPMQ0594	Bushing 1	1	N	
4	FFPMQ0517	Bearing	1	C	
5	FFPKR16742	Bracket, Registration Roller	1	C15	
6	FFPKF12414	Paper guide 1	1	C	
7	FFPKR16831	Bracket, Sensor	1	C15	
8	FFPKH03071	Spacer	1	C	
9	FFPLR02351	Sensor Spring	1	C	
10	FFPLL05991	Sensor Lever	1	C	
11	FFPKM02761	Bracket, Sensor	1	C	
12	FFPWC1577	Sensor Harness	1	C15	
13	TLP1225	Sensor	2	C	
14	FFPKE09881	Harness Cover	1	C15	
15	FFPKB08691	Slide Plate	1	C	
16	FFPFA0140	Shoulder Screw	2	C15	
17	FFPKF1364	Roller Holder	1	N	
18	FFPLL0598	Sensor Lever	1	C15	
19	FFPKR16754	Bracket, Paper Feed Roller	1	C15	
20	FFPLP08171	Spring	1	C15	
21	FFPMA05161	Paper Feed Roller	1	C15	PM
22	FFPKR16822	Bracket, Sensor Lever	1	C15	
23	FFPMQ0595	Bushing 2	1	N	
24	FFPMQ0005	Bushing	1	C	
25	FFPHQ00511	Cup Ring	1	C	
26	FFPLG14423	Shaft, Paper Feed Roller 1	1	N	
27	XPJ2D10WV	Pin	1	C	
28	FFPLQ0413	Ground Spring	1	C15	

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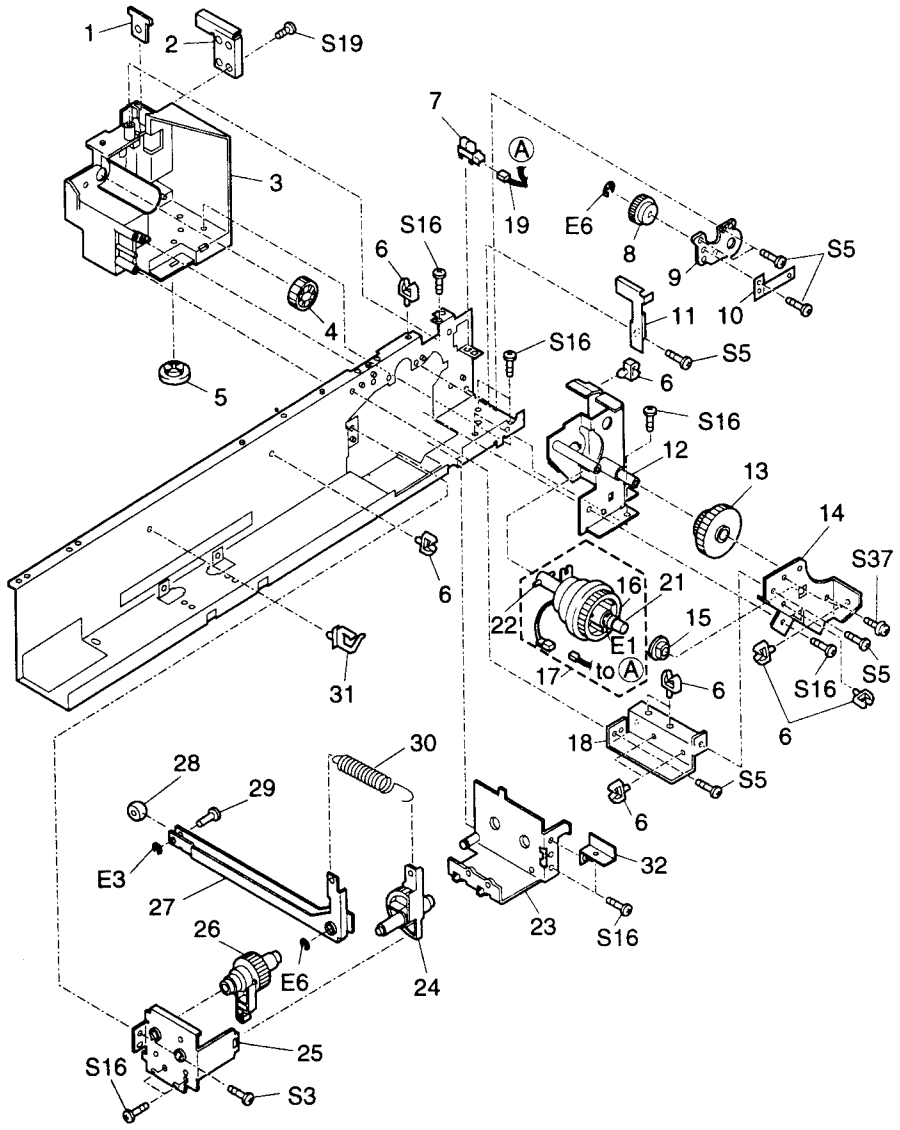

FA-DS16 Rear Frame Ass'y

Ref. No.	Part No.	Description	Q'ty Per Unit	Com-mon	Remarks
1	FFPFF00721	Nut	1	C15	
2	FFPKS1029	Fixing Bracket 3	1	C15	
3	FFPKB08863	Frame, Left (Rear)	1	C15	
4	FFPMF09571	Gear, DFP Shaft	1	C15	
5	FFPNM0028	Foot	1	C15	
6	UAMS05S2	Clamp	9	C	
7	TLP1225	Sensor	1	C	
8	FFPMF0917	Gear, Registration 19T	1	C15	
9	FFPKS10341	Gear Support Plate	1	C15	
10	FFPLQ0411	Ground Spring	1	C15	
11	FFPLQ04101	Sensor Spring	1	C15	
12	FFPKR1812	Bracket 3, Gear	1	N	
13	FFPMF0978	Gear, Drive	1	C15	
14	FFPKS10331	Clutch Support Plate	1	C15	
15	FFPMQ0333	Bushing	1	C15	
16	BJ-3.5-W03	Magnet Clutch 2	1	N	
17	FFPXQ11G50	Paper Feed Roller Shaft Ass'y	1	C15	
18	FFPKE0990	Harness Guide	1	C15	
19	FFPWC15741	KU Harness	1	C15	
20		==Not used==			
21	FFPLG1574	Paper Feed Roller Shaft 2	1	C15	
22	XPL2A14WV	Pin	1	C15	
23	FFPKQ01621	Lift Base	1	C	
24	FFPMF0956	Gear, Cassette Lift	1	C	
25	FFPKS10021	Lift Support Plate	1	C	
26	FFPLK03071	Cassette Lift Arm	1	C	
27	FFPLL0536	Cassette Lift Lever	1	C	
28	FFPMA0374	Lift Roller	1	C	
29	FFPLG1007	Lift Roller Shaft	1	C	
30	FFPLP09601	Lift Spring	1	C	
31	LWS1S	LWS	1	C	
32	FFPKF1375	Clutch Stopper 3	1	N	

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FFPXF09D802	Corona No.2/3 Frame Ass'y (for Taiwan)	P20	9	1
FFPXF09D803	Corona No.2/3 Frame Ass'y	P20	9	1
FFPXF10D611	Corona No. 2/3 Ass'y	P20	0	1
FFPXF10D67	Corona No. 2/3 Ass'y (for Taiwan)	P20	0	1
FFPXF11D80	Rear Frame, Bypass	P17	26	1
FFPXF11D81	Rear Frame, Bypass (for North America)	P17	26	1

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FFPXF21D80	Torque Limiter Ass'y	P17	20	1
FFPXG02D801	Magnetic Roller Ass'y (for Taiwan)	P16	39	1
FFPXG02D81	Magnetic Roller Ass'y	P16	39	1
FFPXG06D80	Corona Block 2	P16	7	1
FFPXG07D801	Corona No.1 Ass'y	P16	1	1
FFPXG08D801	Terminal Case Ass'y	P16	28	1
FFPXG10D60	Cleaning Frame Ass'y (for Taiwan)	P15	1	1
FFPXG10D61	Cleaning Frame Ass'y	P15	1	1
FFPXG11D801	Cover Ass'y	P16	27	1
FFPXG12D811	Developer Unit Ass'y	P16	9	1
FFPXG12D87	Developer Unit Ass'y (for Taiwan)	P16	9	1
FFPXG14D802	Drum Cover Ass'y	P15	12	1
FFPXG14G00	Bracket, Registration Roller (Front)	P26	4	1
FFPXG15G00	Bracket, Registration Roller (Rear)	P26	14	1
FFPXJ01D80	Exit Tray Ass'y	P2	4	1
FFPXK01D60	Drive Bracket, Front Ass'y	P13	8	1
FFPXK02D80	5/6 Tension Plate, Front Ass'y	P13	12	1
FFPXK03D80	5/6 Belt, Front Ass'y	P13	5	1
FFPXK05D60	Drive Bracket, Rear Ass'y	P13	18	1
FFPXK06D80	5/6 Tension Plate, Rear Ass'y	P13	19	1
FFPXK07D80	5/6 Belt, Rear Ass'y	P13	27	1
FFPXK12D80	Connection Shaft Ass'y	P13	25	1
FFPXK17D80	Pulley Bracket, Left Ass'y	P9	21	2
FFPXK19D80	Pulley Bracket, Right Ass'y	P9	2	2
FFPXK21D802	Shaft Ass'y, Half Speed Unit	P9	12	1
FFPXK22D80	Shaft Ass'y	P9	13	1
FFPXK27D80	Motor Ass'y	P10	10	1
FFPXK29G011	Original Guide Ass'y (for North America)	P1	4	1
FFPXK29G031	Original Guide Ass'y (Others)	P1	4	1
FFPXK29G071	Original Guide Ass'y (for Taiwan)	P1	4	1
FFPXK30D80	Solenoid Ass'y	P10	6	2
FFPXK32D60	Tension Arm Ass'y	P9	10	2
FFPXK33D60	Tension Arm Ass'y, Front	P9	18	1
FFPXK34D60	Tension Arm Ass'y, Rear	P9	25	1
FFPXQ06G00	Paper Feed Door Ass'y	P25	12	1
FFPXQ07G00	Gear Arm Ass'y	P24	10	1
FFPXQ08G00	Drive Block Ass'y	P24	5	1
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H12V1KWN1A	Lamp (for North America/Taiwan)	P19	37	1
H22V1KWN1A	Lamp (except North America/Taiwan)	P19	37	1
HL18-0	Harness Lifter	P7	16	1
KGLS3S	Card Spacer	P10	16	2
KGLS6S	Card Spacer	P8	21	3
LWS1NS	LWS	P24	12	1
LWS1S	LWS	P4	23	1
LWS1S	LWS	P7	11	4
LWS1S	LWS	P18	10	2
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LWS1S	LWS	P28	31	1
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PQ24V12WMG1	Lamp	P5	2	1
SR6N3-4	Cord Bushing (for North America)	P7	5	1
SR6N4	Cord Bushing (Others)	P7	5	1
SR6N4-4	Cord Bushing (for Taiwan)	P7	5	1
TLP1225	Sensor	P5	5	2
TLP1225	Sensor	P9	11	2
TLP1225	Sensor	P13	17	1
TLP1225	Sensor (FP-7713)	P18	15	1
TLP1225	Sensor (FP-7715)	P18	15	2
TLP1225	Sensor	P19	18	1
TLP1225	Sensor	P27	13	2
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TS0524ANA71C	TDC Sensor	P16	26	1
UAMS05S2	Clamp	P4	11	1
UAMS05S2	Clamp	P6	16	4
UAMS05S2	Clamp	P10	15	8
UAMS05S2	Clamp	P18	4	5
UAMS05S2	Clamp	P21	26	2
UAMS05S2	Clamp	P24	11	1
UAMS05S2	Clamp	P28	6	9
XPJ2D10WV	Pin	P5	22	1
XPJ2D10WV	Pin	P18	32	2
XPJ2D10WV	Pin	P27	27	1
XPL2A14WV	Pin	P28	22	1
XXE3D8FP	Set Screw	P8	30	1

Numerical Parts Index

Screws, E Rings, Washers

No.	Part No.
	Screws
S1	XSB3+4
S2	XSB3+6BN
S3	XSB4+6FN
S4	XTB3+4F
S5	XTB3+6F
S6	XTB3+6FFN
S7	XTB3+6G
S8	XTB3+8F
S9	XTB3+8G
S10	XTB3+8GFN
S11	XTB3+8J
S12	XTB3+10F
S13	XTB3+10G
S14	XTB3+12G
S15	XTB3+16F
S16	XTB4+8G
S17	XTB4+8GFN
S18	XTB4+8H
S19	XTB4+10F
S20	XTB4+10FFN
S21	XTB4+10G
S22	XTB4+10GFN
S23	XTB4+12G
S24	XTN2+6G
S25	XTN3+6FFUB-C
S26	XTT4+8FFN
S27	XTT4+10FFN
S28	XTW4+14Q
S29	XTN4+34G
S30	XYC3+FF8
S31	XYC3+JF8
S32	XYN3+6F
S33	XYN3+8F
S34	XYN3+A6BN
S35	XYN3+A8-B
S36	XYN3+F6
S37	XYN3+F8
S38	XYN4+F8
S39	XYN4+F10

No.	Part No.
	Erings
E1	XUB8VM
E2	XUC25VM
E3	XUC2VM
E4	XUC3VM
E5	XUC4VM
E6	XUC5VM
E7	XUC6VM
E8	XUC7VM
E9	XUC8VM
E10	XNB4VM
	Washers
W1	XWA4BPN
W2	XWC3BFN
W3	XWG3BN
W4	XWG3FN
W5	XWG4
W6	XWG4F13
W7	XWA3B

AC120/220-240V LINE
DC+24V LINE
DC+5V LINE

Bedienfeld
CN201: CPDATA, CPKEY, CLCLK, CPLD, CPLATCH, TED, TEDP, KCLK, SGND, VL

Vollschritt-einheit-magnet
Halbschritt-einheit-magnet
Optikantriebsmotor
AE-sensor
5/6 Spiegel-einheit Grund-stellungssensor
Lampen-Grund-stellungssensor
Objektiv einheit-Ground-stellungssensor

CNSN: VP, SNSOL
CN5/6S: VP, H56SOL
CNLM: BCP, VP, BP, ACP, VP, AP
CNAE: AESN, AGND, VL
CN56HP: SGND, 5/6HPSN, VL
CNHP: SGND, HPSN, VL
CNHSH: SGND, HSHPSN, VL

CN661: VP, SNSOL, VP, H56SOL
CN660: BCP, VP, BP, ACP, VP, AP
CN655: AESN, AGND, VL
CN659: SGND, 5/6HPSN, VL
CN656: SGND, HPSN, VL
CN662: SGND, HSHPSN, VL

CN657: LPFCNT2, LPFLCK2, PGND
CNLPF2: LPFCNT2, LPFLCK2, PGND
FM — Optikkühlgebläse-motor (B)
CN658: LPFCNT1, LPFLCK1, PGND
CNLPF1: LPFCNT1, LPFLCK1, PGND
FM — Optikkühlgebläse-motor (A)

Tonerdichten-sensor
TDC
CNTDC: SGND, TDC, VP, TDCNT

Tonerflaschen-motor
BSM
CNBT: ACPB, VP, APB, BPB, VP, BCPB
CNTD: SGND, TDC, VP, TDCNT, DVE, SGND

Optics driver PCB
CN653: VP, PGND
CN651: PS0, PS2, PS1, PS3, LMPD, SNSL, H56SL, AESN, VL
CN652: SGND, LPFLCK1, LPFLCK2, LPFCNT, 56HPSN, HPSN, HSHPSN, VL, SGND, SGND
(ADF CPU CN101)
DC+10V line

Belspiel : I/O F4 C21
Code
Betrieb
Eingang/Ausgang-Prüfung

Thermostat I
Thermostat II
Heizlichtung siamp.
Fixerstrahler
A201, A202
A101, A102
F4 C23
F4 C22

Choke coil
CNLP: ACI, EXLP
CNEC: CHK1, CHK2
CN402: ACI, EXLP
F(AC) ACI
F(FU) FULP
CN406: VP, VP, PGND, PGND
CN413: CHK2
CN412: CHK1
Niederspannungs-Betriebsspannung (LVPS)
CN408: AC1, —, AC2
CNADF: AC1, AC2
F(L) AC1
F(N) AC2
(ADF power)
Power cord
Primary ↔ Secondary

CN7: VP, PGND
CN27: CTXD, CRXD, SGND, CENB
CN407: LFB1, LFB2, VL, ZCRS, SGND, LPTR, HTTR
CN21: LFB1, LFB2, VL, ZCRS, SGND, LPTR, HTTR
CN405: VCNT, SGND, VL, AGND, VO
CN1: VCNT, SGND, VL, AGND, VO
DC+10V line

CN5: CPDATA, CPKEY, LCLK, CPLD, LPLATCH, TED, TEDP, KCLK, SGND, VL
CN17: RXDB, RXD, SGND, TXDB, TXD
(FP-7715)
CN22: PS0, PS2, PS1, PS3, LMPD, SNSL, H56SL, AESN, VL
CN23: SGND, LPFLCK1, LPFLCK2, LPFCNT, 56HPSN, HPSN, HSHPSN, VL, SGND, SGND
CN4: ACPB, VP, APB, BPB, VP, BCPB
CN16: SGND, TDC, VP, TDCNT, DVE, SGND

CPU

CN11: VP, CT
CN13: SGND, CPESN, VL
CN12: SGND, RRSN, VL
CN10: SGND, PFOSN, VL
CN24: SGND, HFPPSN, VL
CN25: SGND, HFPESN, VL
CN19: VP, RRCR, VP, HFCR, VP, HFSOL, TH2, TH1
CN14: MMLCK, PGND, MMCNT, PGND, VP, PGND, EXFLCK, EXFCNT, PFCR, VP

CNCT: VP, CT — Kopiengesamtzähler — F4 C02
CNCPE: SGND, CPESN, VL — CPESN (FP-7715) — Kopierer-Papiererkennungssensor
CNRR: SGND, RRSN, VL — RRSN — Registrations Walzensensor — F4 C00
CNPFOC: SGND, PFOSN, VL — CNPFO: SGND, PFOSN, VL — PFOSN — Papierduslaufsensor — F4 C03
CNHFPP: SGND, HFPPSN, VL — HFPPSN — Bypass-Papierdurchlaufsensor — F4 C00
CNHPE: SGND, HFPESN, VL — HFPESN — Bypass-Papiererkennungsensor (FP-7715)
CNRR: VP, RRCR — Bypass-Registrations Walzenkupplung — F4 C30
CNHF: VP, HFCR — Bypass-Papiereinzugskupplung — F4 C29
CNTH: TH2, TH1 — Thermistor
A1, A2
CNMM: MMLCK, PGND, MMCNT, PGND, VP — MM — Hauptmotor — F4 C02, F4 C26
CNEX: PGND, EXFLCK, EXFCNT — FM — Fixer-Kühllüfter — F4 C02, F4 C20
CNPF: PFCR, VP — Papier-einzugs-kupplung — F4 C28

CN3: SGND, SHPSN, VL
CNSHPC: SGND, SHPSN, VL
CNSHP: SGND, SHPSN, VL — SHPSN
Tonerflaschen-Grundstellungssensor

CN6: VP, ELP
EL — Entladelampe — F4 C03

CN18: VP, PGND, HVCNT, HVLKC, GRCNT, GCNT, HVBCNT, BCNT
CN701: VP, PGND, HVCNT, HVLKC, GRCNT, GCNT, HVBCNT, BCNT
HVPS — F4 C03

(FP-7715)
CN15: SGND, ODOSN, VL, SGND, OPESN, VL, —, —, —, —, VP, CRRCR, VP, OPFCR, SGND, MDRSN, VL, —

CNODO: SGND, ODOSN, VL — ODOSN — (Sensor der Papiereinzugöffnung)
CNOPE: SGND, OPESN, — — OPESN — (Papiererkennungsensor)
CNORR: VP, CRRCR — (Registrations Walzen-kupplung)
CNOPF: VP, OPFCR — (Papiereinzugs-kupplung)
CNMDR: SGND, MDRSN, VL — MDRSN — (Registrations-walzen-Papierdurchlauf-sensor)

FA-DS16 (Papiereinzugtisch)

Important safety notice
Components identified by ⚠ mark have special charateristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Alle bauteile, die mit diesem Zechen ⚠ markiert sind, haben wichtige Merkmale für die Sicherheit. Falls die Bauteile ausgetauscht werden, dürfen sie nur durch vom Herrsteller empfohlene Bauteile ersetzt werden.

Notice de sécurité
Lors du remplacement des composants ayant le symbole ⚠ n'utiliser que des pièces d'origines, celles-ci ayant des caractéristiques spécifiques.

Erklärung der Kurzzeichen

56HPSN	Ein/Aus-Signal für den Spiegeleinheit Nr.5/6-Grundstellungssensor
AC1	Wechselstrom 220 V Netz (phase)
AC2	Wechselstrom 220 V Netz (Null)
ACP	Antriebssignal für den Lampeneinheit-Abtastmotor $\overline{A}$
ACPB	Antriebssignal für den Tonerzugabe/Schwärzungsverhinderung-Filmmotor $\overline{A}$
AESN	Ausgangssignal für Auto-Originalhelligkeitssensor
AGND	Masse
AP	Antriebssignal für den Lampeneinheit-Abtastmotor A
APB	Antriebssignal für den Tonerzugabe/Schwärzungsverhinderung-Filmmotor A
BCNT	Biasspannung-Steuersignal
BCP	Antriebssignal für den Lampeneinheit-Abtastmotor $\overline{B}$
BCPB	Antriebssignal für den Tonerzugabe/Schwärzungsverhinderung-Filmmotor $\overline{B}$
BP	Antriebssignal für den Lampeneinheit-Abtastmotor B
BPB	Antriebssignal für den Tonerzugabe/Schwärzungsverhinderung-Filmmotor B
CEPSN	Signal für Kopierpapier-Erkennungssensor
CHK1	Halterung für Drossel-Spule 1
CHK2	Halterung für Drossel-Spule 2
CPDATA	Bedienfeld-Übertragungsdaten
CPKEY	Bedienfeld-Schlüsseldaten
CPLATCH	Bedienfeld-Übertragungsdatensperrsignal
CPLD	Bedienfeld-Übertragungsdatenladungssperrsignal
CRRCR	Papiereinzugtisch-Registrierwalzenkupplung Ein/Aus-Signal
CT	Ein/Aus-Signal des Gesamtzählers
DVE	Entwicklereinheiteninstallierungssignal
ELP	Ein/Aus-Signal der Entladungslampe
EXFCNT	Ein/Aus-Signal für den Fixierkühlgebläsemotor
EXFLCK	Taktsignal für den Fixierkühlgebläsemotor
EXLP	Belichtungslampensteuersignal
FULP	Heizstrahlersteuersignal
GCNT	Gitterspannungssteuersignal
GND	Masse
GRCNT	Ein/Aus-Signal für den Gitterspannungssignal
H56SL	Steuersignal für den Halbschritteinheitmagnet
H56SOL	Antriebssignal für den Halbschritteinheitmagnet
HFCR	Ein/Aus-Signal für den Bypasskupplung
HFPESN	Bypass-Papiererkennungssensor-Signal
HFPPSN	Signal für den Bypass-Papierwegsensor
HFSOL	Einzelblatt-Bypass Magnetsteuersignal
HPSN	Ein/Aus für den Vollschritteinheitgrundstellungssensor
HSHPSNS	Ein/Aus für den Halbschritteinheitgrundstellungssensor
HTTR	Ein/Aus-Signal für den Heizstrahler
HVBCNT	Hochspannungsversorgung Ein/Aus-Signal (für Gitter/Entladungssäge)
HVCNT	Hochspannungsversorgung Ein/Aus-Signal (für Ladung/Übetragungskorona)
HVLKC	Hochspannungsladung-Übertritterkennsignal
KCLK	Bedienfeld-Schlüsseldaten-Übetragungstarktsignal
LCLK	Bedienfeld-LEDdaten-Übertragungstarktsignal
LFB1	Sapnnunggrückkopplung (1) für Belichtungslampe
LFB2	Sapnnunggrückkopplung (2) für Belichtungslampe
LPFCNT	Ein/Aus für den Optikkühlgebläsemotor
LPFCNT1	Ein/Aus-Steuersignal für den Optikkühlgebläse (B)-Motor
LPFCNT2	Ein/Aus-Steuersignal für den Optikkühlgebläse (A)-Motor
LPFLCK1	Taktsignal für den Optikkühlgebläse (B)-Motor
LPFLCK2	Taktsignal für den Optikkühlgebläse (A)-Motor
LMPD	Stromheruntersignal für den Lampeneinheit-Abtastmotor
LPTR	Ein/Aus-Signal für den Belichtungslampe
MDRSN	Papiereinzugtisch-Registrierwalzen-Sensorsignal
MMCNT	Ein/Aus-Signal für den Hauptmotorantrieb
MMLCK	Hauptmotortaktsignal
ODOSN	Papiereinzugtisch-Papierklappe Offen/Geschlossen-Signal
OPESN	Papiereinzugtisch-Papiererkennung-Sensorsignal
OPFCR	Papiereinzugtisch-Papiereinzugwalze Ein/Aus-Signal
P50	Antriebssignal für den Lampeneinheit-Abtasmotor $\overline{A}$
P51	Antriebssignal für den Lampeneinheit-Abtasmotor $\overline{A}$
P52	Antriebssignal für den Lampeneinheit-Abtasmotor B
P53	Antriebssignal für den Lampeneinheit-Abtasmotor B
PFCR	Ein/Aus-Signal für die Papiereinzugwalzenkupplung
PFOSN	Ein/Aus-Signal für den Papierauslaufsensor
PGND	Strom-Masse (24-V-Leitung)
RRCR	Ein/Aus-Signal für Synchronwalzenkupplung
RRSN	Ein/Aus-Signal für Synchronwalzensensor
SCID	Papiereinzugtisch-Erkennungssignal
SGND	Strom-Masse (5-V-Leitung)
SHPSN	Ein/Aus-Signal für den Schwärzungsverhinderung-Filmgrundstellungssensor
SNSL	Steuersignal fül den Vollschritteinheitmagnet
SNSOL	Antriebssignal für den Vollschritteinheitmagnet
TDC	Tonerdichtensensorsignal
TDCNT	Tonerdichtensensor-Verstärkungssignal
TH1	Fixierstationsthermistor-Anschlußklemme (1)
TH2	Fixierstationsthermistor-Anschlußklemme (2)
VCNT	Gleichstrom +24 Ein/Aus-Signal
VL	Gleichstrom +5V Betriebsstromversorgung
VO	Gleichstrom +10V Betriebsstromversorgung
VP	Gleichstrom +24V Betriebsstromversorgung
ZCRS	Nulldurchgangssignal

Einstellung

1. Einstellung der Entwicklereinheit

1) Automatische Verstärkungseinstellung des Tonerkonzentrationssensors

Achtung
- Nach dem Austausch des Entwickler- oder Tonerdichtensensors muß diese Einstellung vorgenommen werden.
- Wenn der Netzschalter auf EIN geschaltet wird und die Anzeige ADD TONER blinkt, wird Toner bei der Initialisierung automatisch eingefüllt. Die Tonerdichtenabweichung ist größer als der Richtwert.

a) Die Entwicklereinheit ausbauen.
b) Die Tasten PAPER TAY, ZOOM DOWN und MULTI-COPY 1 (FP-7715)/ 1 Zifferntaste (FP-7713) drücken. "Zoom Down" und Zifferntaste "
c) Die Entwicklereinheit wieder einsetzen.
d) F8-C09 wählen.
e) Die Kopiertaste (PRINT) für automatische TDC-Sensor-Einstellung drücken. (Etwa 2 Minuten warten, bis der Einstellzyklus stoppt.)
f) Die Inhalte von F6-21 und 26 auf dem Notizblatt eintragen.
g) Die Tasten PAPER TRAY, ZOOM DOWN und CLEAR/STOP drücken, um die F-Betriebsart zu verlassen.

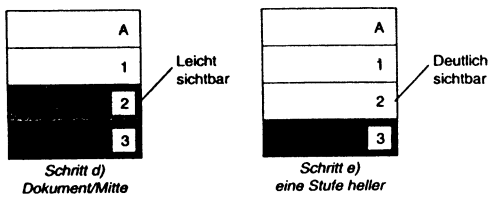
2. Einstellung der Optikeinheit

1) Standardeinstellung der Bildhelligkeit
Nach dem Austausch der Trommel, Belichtungslampe oder automatischen Originaldichtensensors muß diese Einstellung ausgeführt werden. durchzuführen.
a) Geben Sie den Modus F6 ein.
b) Setzen Sie F6-C61 auf "0" wenn es notwendig ist.
c) Geben Sie den Modus F2 ein und stellen Sie die Belichtung im Dokument-Modus auf Mitte.
d) Erstellen Sie eine Kopie vom Testblatt #54 mit der Grauskala (P/N FQ-SJ101).

- Graustufe 1 sollte nicht sichtbar sein.
- Graustufe 2 sollte deutlich sichtbar sein.

e) Um sicher zu stellen das die Grau Skala #2 nicht zu dunkel oder zu hell ist, drücken Sie die Hell Taste einmal (eine Stufe heller, D3) und wiederholen Sie Schritt d).

- Grau Skala #2 sollte deutlich sichbar sein.



f) Wenn erforderlich, F6-C11 justage durchführen.
Hinweis: Wenn die Belichtung zu hell ist, (–) Richtung = Belichtung dunkler.
Wenn die Belichtung zu dunkel ist, (+) Richtung = Belichtung heller.
g) Wiederholen Sie Schritt c bis g bis die Belichtung einwandfrei ist.

Service-Betriebsarten

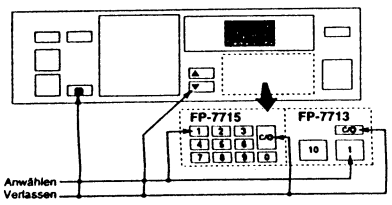
Die Servicebetriebsarten dienen dazu, Fehlfunktionen präzise und sicher aufzufinden. Das Bedienfeld zeigt das Auftreten jeglicher Störungen in den einzelnen Gerätesektionen an. Für eine Diagnose der Fehlfunktionen kann jede Gerätesektion einzeln betrieben werden. Darüber hinaus dienen die Service-Betriebsarten zur Änderung von gespeicherten Parametern.

Anwählen: Die Tasten PAPER TAY, ZOOM DOWN und MULTI-COPY 1 (FP-7715)/1 Zifferntaste (FP-7713) drücken. "Zoom Down" und Zifferntaste "1".

Verlassen: Durch gleichzeitiges Drücken der Tastenkombination "Papierformat", "Zoom Down" und "Lösch/Stop".

Hinweis:
- Bei anormalem Betriebszustand erscheint F4 in der Ziffernanzeige.
- Wird der Kopierer nach der Wartung in der Betriebsart "F" aus-und später wieder eingeschaltet, startet dieser wieder in der Betriebsart "F". Zum Abschalten der Betriebsart "F" muß das Freigabeprogramm verwendet werden.
- Wenn die Entwicklereinheit nicht installiert ist erscheint "UFX" in der Ziffernanzeige (X bedeutet Service Betriebsart).

Vorsicht: Netzspannung Tropenheizung bleibt eingeschaltet, auch wenn das Gerät nicht arbeitet. Immer das Gerät vom Netz trennen (Steckdose), bevor Wartungs-oder Montagearbeiten vorgenommen werden.



Funktionen der Servicebetriebsart:

Wartungsmodus	Gegenstand	Funktion
F1	Anzeigenüberprüfung	Anzeigen- und Displayprüfung.
F2	Einzelblattkopierbetrieb	Für Einzelkopiervorgang.
F3	Fortlaufender Kopierbetrieb	Für Mehrfachkopiervorgang.
F4	Eingang/Ausgang-Prüfung	Prüfung der richtigen Funktion von Eingang/Ausgang (Wahl durch Codenummer).
F5	Kopierer-Funktionsprogrammierungen	Einstellung der verschiedenen Funktionen (gewählt durch Codenummern) kann geändert werden.
F6	Einstellung und Programmierungen	Verschiedene Einstellungen (gewählt durch Codenummern) können geändert werden.
F7	Programmierung des Elektronikzählers	Lesen oder Rückstellen des elektronischen Zählwerks.
F8	Kopierer-Betriebseinstellung	Grundeinstellungen (durch Codenummern gewählt).

Hinweis: Das Speicherdatenblatt für F5 und F6 und die RAM-Informationen sind innen an der rechte Abdeckung befestigt.

Funktionstasten der Servicebetriebsart:

Funktion	Tastenwahl	
Manuelle Tonerzufuhr	Papierformat-taste	Zifferntaste "10"
Elektronikzähler • Für die höheren Stellen leuchten die drei Ziffern der Ziffernanzeige und die Papiermangelanzeige. • Für die niedrigen Stellen leuchten die drei Ziffern der Ziffernanzeige und die Tonermalngelanzeige.		Zoom Down-taste
Kondensationsverhinderungseinstellung **Hinweis:** Wenn die F5-C13-1 zu 4 und F5-C14-1 eingabe.		Abbildungsmaßstab-Taste

Funktionsablauf der Servicebetriebsart

Betriebsart	"Mehrfachkopier"taste	Gegenstand	Funktion	Bemerkungen
F1	1	Anzeigeprüfung	Wenn die Kopiertaste gedrückt wird, leuchten alle Displayanzeigen auf.	Durch Drücken der Löschen/Stop-Taste erlöschen die Anzeigen wieder.
F2	2	Einzelblattkopie	Ein Blatt wird kopiert, wenn die Kopiertaste gedrückt wird.	1. Der Gesamtzähler und der Elektronikzähler zählen für F2 und F3 nicht. 2. Wenn die Kopiertaste gedrückt wird, erscheinen die Anzeigen PF2 oder PF3 in der Ziffernanzeige, wenn kein Papier im Fach ist. 3. In Betriebsart F3 die Löschen/Stop-Taste zum Ausschalten des Kopierbetriebs drücken. 4. In den Betriebsarten F2 und F3 wird, wenn Papier in die Kassette eingelegt ist, die Papierstauerkennung aktiviert. 5. Befindet sich kein Papier in der Kassette, wird die Papierstauerkennung nicht aktiviert.
F3	3	Kontinuierliches Kopieren	Mehrfachkopieren wird eingestellt, wenn die Kopiertaste gedrückt wird.	

Wartungsfunktion

Reparaturrufanzeige-Rückstellung	F5-C70-5 emeut wählen.
Reparaturruf-und Wartungsrufanzeige-Rückstellung	Siehe "Modus F7-C22".

Eingang/Ausgang-Prüfung in der Betriebsart F4

Eingangsprüfung

Code Nr.	Belichtungsanzeige	Funktion	Betriebszustand
00	Dunkel ■	–	–
	■	–	–
	■	–	–
	○	Bypass-Papierwegsensor	Papier nicht erkannt.
	■	–	–
	■	–	–
	Hell □	Synchronwalzensensor	Papier nicht erkannt.
01	■	–	-
	■	–	–
	□	Vollschritteinheitgrundstellungssensor	Grundstellung.
	○	Halbschritteinheitgrundstellungssensor	Grundstellung.
	□	Spiegeleinheit Nr.5/6-Grundstellungssensor	Grundstellung.
	■	–	–
	□	Schwärzungverhinderung-Filmgrundstelungssensor	Grundstellung.
02	□	Optikkühlgebläse aus (A)	Normal für Motordrehung stopp Zustand.
	□	Optikkühlgebläse aus (B)	Normal für Motordrehung stopp Zustand.
	□	Entwicklereinheitinstallierung	Entwicklereinheit nicht erkannt.
	○	Fixierkühlgebläse aus	Normal für Motordrehung stopp Zustand.
	□	Hauptmotor aus	Normal für Motordrehung stopp Zustand.
	□	Gesamtzähler	Gesamtzählerinstallierung.
	■	–	–
03	■	–	–
	□	Abnormal für Gleichspannungversorgung +10V	Abnormal.
	□	Abnormal für Entladungslampe	Abnormal.
	○	Hochspannungsüberschlagerkennung	Hochspannungsüberschlag wird nicht erkannt (Normal).
	■	–	–
	■	–	–
	□	Papierauslaufsensor	Papier nicht erkannt.
04	□	Papiererkennungssensor (Kopierer)	Papier wird nicht erkannt.
	□	–	–
	□	–	–
	○	–	–
	□	Papiererkennungssensor (Bypass) (FP-7715)	Papier wird nicht erkannt.
	■	—	—
	■	—	—
05 (FP-7715)	□	Papiererkennungssensor (Papiereinzugtisch)	Papier wird nicht erkannt.
	□	–	–
	□	–	–
	○	–	–
	■	—	—
	■	—	—
	■	—	—
06 (FP-7715)	□	ADF-Originalerkennungssensor	Original nicht erkannt.
	□	ADF-Papiereinzugsensor	Original nicht erkannt.
	□	ADF-Papierauslaufsensor	Original nicht erkannt.
	○	ADF Offen/Geschlossen-Sensor	ADF geöffnet.
	■	—	—
	■	—	—
	■	—	—
07 (FP-7715)	□	ADF Encoder-Sensor	Licht wird nicht erkannt
	■	—	—
	■	—	—
	●	—	—
	■	—	—
	■	—	—
	■	—	—

Ausgangsprüfung

Vor der Ausgangsprüfung den Klappenschalter einschalten.

Code	Gegenstand	Funktion	Bemerkungen
20	Fixierstationskühlgebläse	Das Gebläse wird durch Drücken der Kopiertaste eingeschaltet.	Sichtprüfung • Die Lösch/Stop-Taste zum Rückstellen drücken.
21	Optikkühlgebläsemotor (A) und (B)		
22	Vollschritteinheitmagnet	Der Magnet wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	Sichtprüfung
23	Halbschritteinheitmagnet		
24	Auto-Originalhelligkeits magnet		
25	Belichtungslampe • Um Beschädigungen der Trommel zu verhindern, die Entwicklereinheit entfernen. • Um zu starke Erwärmung zu vermeiden, diesen Vorgang nicht zu häufig ausführen.	Die Belichtungslampe wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	
26	Hauptmotor (Entladungslampe Entwicklerbias und Fixerstationskühlgebläse)	Der Motor wird bei Drücken der Kopiertaste eingeschaltet.	Sichtprüfung • Zum Rückstellen die Lösch/Stop-Taste drücken.
27	+24V eingeschaltet.	24-V-Spannung wird durch Drücken der Kopiertaste erzeugt. **Hinweis:** Meßgerät zur Überprüfung zwischen VP und GND an der CPU-Leiterplatte anschließen.	
28	Papiereinzugwalzenkupplung	Die Kupplung wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	Sichtprüfung
29	Bypasskupplung	Bei Drücken der Kopiertaste bleiben CN8-7 und PGND eingeschaltet (+24V ist eingeschaltet).	
30	Synchronwalzenkupplung	Bei Drücken der Kopiertaste bleiben CN8-1 und PGND eingeschaltet (+24V ist eingeschaltet).	
31	Gesamtzähler	Der Gesamtzähler beginnt bei Drücken der Kopiertaste zu zählen.	
32	Heizstrahler	Die Heizstrahler wird bei Drücken der Kopiertaste 2 Sekunden lang eingeschaltet.	

Code	Gegenstand	Funktion	Bemerkungen
33	Papiereinzugwalzenkupplung (Papiereinzugtisch) (FP-7715)	Die Papiereinzugwalzenkupplung schaltet 2 Sekunden lang EIN, wenn die Kopiertaste gedrückt wird.	Sichtprüfung. • Die Taste CLEAR/STOP zum Rückstellen drücken.
34	Registrierwalzenkupplung (Papiereinzugtisch) (FP-7715)	Die Registrierwalzenkupplung schaltet 2 Sekunden lang EIN, wenn die Kopiertaste gedrückt wird.	
35	ADF-Hauptmotor (Vorwärtsdrehung) (FP-7715)	Der ADF-Hauptmotor dreht vorwärts, wenn die Kopiertaste gedrückt wird.	
36	ADF-Hauptmotor (Rückwärtsdrehung) (FP-7715)	Der ADF-Hauptmotor dreht rückwärts, wenn die Kopiertaste gedrückt wird.	
37	ADF-Papiereinzugmagnet (FP-7715)	Der Magnet wird angesteuert, wenn die Kopiertaste gedrückt wird.	

Kopierer-Funktionsprogrammierung in der Betriebsart F5

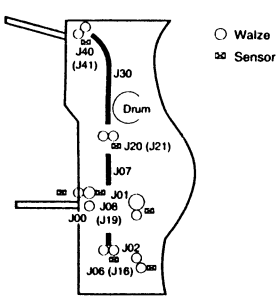
	Code	Gegenstand	Funktion	(Werkseitige Einstellung
System	00	Ländermodell **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Japan-Modell 1: US-Modell 2: Europa-Modell	2
	01	Gewünschte Frequenz **Hinweis:**	0: 50Hz 1: 60Hz	0
	02	Automatische Rückstellung **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Nicht vorhanden 1: 30 Sekunden 2: 1 Minuten 3: 2 Minuten	1
	03	Bereitschafts-Timer **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Keine Bereitschaftsfunktion 1: Bereitschaftsfunktion (2 Minuten) 2: Bereitschaftsfunktion (4 Minuten)	0
	09	Elektronische Heizstrahler-Startsteuerung (bei eingeschalteter Netzversorgung)	0: Nulldurchgangssynchronsteuerung 1: Phasensteuerung	1
	10	Optikkühlgebläsesteuerung **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Normaler Betrieb 1: Belichtungslampe schaltet ein, Zeitsteuerung	1
	11	Schnellstart-Funktion **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Nicht aktiv 1: Aktiv	1
	13	Stromspar/Kondensationsverhinderung **Hinweis:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	0: Keine 1: 5 Minuten 2: 10 minuten 3: 30 minuten 4: 60 minuten	0
	14	Stromspar/Kondensationsverhinderung Wahl	0: Stromspar 1: Kondensationsverhinderung	0
Sonderzubehör	20	ADF (FP-7715)	0: Aufheben von ADF 1: ADF-Installation wird automatisch bestimmt. (Wenn das ADF-Signalkabel an die CPU-Leiterplatte des Kopierers angeschlossen ist, erkennt der Kopierer ADF automatisch.)	1
	22	Papiereinzugtisch (FP-7715)	0: Aufheben der Papiereinzugkonsole 1: Papiereinzugtisch automatisch bestimmt (Wenn das Signalkabel des Papiereinzugtisches an die CPU-Leiterplatte des Kopierers angeschlossen ist, erkennt der Kopierer den Einzugtisch automatisch.)	1
	24	Belichtungslampenspannung für die Konstantlichtstärkenmessung	0: Inaktiv (ausgeschaltet) 1: Aktiv (eingeschaltet)	1
	33	ADF-Bewegung ohne Original (FP-7715)	0: Keine Bewegung ohne Original 1: ADF-Bewegung ohne Original mit F2-Betriebsart (kontinuierliche Bewegung)	0
	34	Hintergrung für Trommelkompensation	0: Keine Funktion 1: Belichtung 1 Schritt (0,2V) alle 1,600 Kopien = max. 38 Schritte 2: Belichtung 1 Schritt (0,2V) alle 2,000 Kopien = max. 30 Schritte 3: Belichtung 1 Schritt (0,2V) alle 2,400 Kopien = max. 26 Schritte	1
Zähler	40	Doppelzählung (Gesamtzähler, Schlüsselzähler und Elektronikzähler)	0: Einzelblatt 1: A3-Format 2: A3/B4-Format	1
	41	Kopienzählung	0: An Papiereinzugwalzenkupplung 1: An Papierauslaufsensor	1
Einschaltstatus	50	Automatische Originalhelligkeitsabtastung (bei eingeschalteter Netzversorgung)	0: Nicht aktiv 1: Automatikbetriebpriorität 2: Dokumentenbetriebpriorität	1
	59	Kopiererbetrieb (wenn die Tonerbehälter leer ist)	0: Kopierer stoppt, oder Kopierzyklus wird begrenzt 1: Fortgesetzter Kopiererbetrieb (Einstellung nur im Werk = Nicht diese Nummer verwenden.)	0
	60	Automatische Kassettenposition-Wahl	0: Keine Erkennung 1: Erkennung = Wenn beim Kopierzyklus kein Papier in der Kassette ist, wird automatisch die Kassettenposition gleicher Größe und Richtung gewählt.	1
	63	U13 gelöscht = Leer nach Toner Erkennung (Kopierer stoppt, oder Kopierablauf unterbrochen)	0: Beim Löschen von U13 eine beliebige Taste drücken 1: Die Taste "Paper Tray" und die Zifferntaste "10" (FP-7713)/ZIFFERNTASTE "0" (FP-7715)	0
Vorbeugende Wartung	70	Vorbeugende Wartrung	0: Keine Aufforderung 1: 1.000 Kopien 2: 2.000 Kopien 3: 4.000 Kopien 4: 16.000 Kopien 5: 30.000 Kopien	5

Code	Gegenstand	Funktion	Bemerkungen
08	Sperrfunktion für Vollschritteinheit, Hlabschritteinheit und Spiegeleinheit Nr.5/6	Diese Funktion rückt Vollschritteinheit, Halbshchritteinheit und Spiegeleinheit Nr.5/6 in eine Sperrposition für den Transport des Kopierers. **Hinweis:** Nach der Sperrung von das einheiten erscheint "0" in der Ziffernanzeige. Die Eingabe anderer Ziffern wird hiernach nicht mehr akzeptiert.	Die Sperrung wird durch Drücken der Kopiertaste automatisch rückgestellt.
09	Automatische Verstärkungseinstellung des Tonerkonzentrationssensors • Diese Einstellung muß beim Wechseln von Entwickler erfolgen.	Diese Funktion stellt automatisch die Verstärkungsspannung und den Beurteilungspegel des Tonerkonzentrationssensors ein. **Bedienungsablauf:** a) Den neuen Entwickler in die Entwicklerstation einfüllen. b) Spannung und Beurteilungspegel werden durch Drücken der Kopiertaste automatisch eingestellt.	Für etwa 2 Minuten in Betrieb.

Bedienungsfehler

Fehler Code	Störung	Ursache/Prüfung
o	Stromspar und Kondensationsverhinderung • Zum Löschen von "0" drücken Sie eine der Zifferntasten.	1. Bei Abschluß des Kopiervorgangs nach Verstreichen von F5-C13-eingabe.
O	Bereitschaftsbetrieb • Die Ziffernanzeige zeigt "0", und alle anderen Anzeigen sind ausgeschaltet. • Zum Aufheben des STAND-BY-Betriebs drücken Sie eine Zifferntaste.	1. Bei Abschluß des Kopiervorgangs nach Verstreichen von 2 Minuten (Eingabe F5-C03-1) oder 4 Minuten (Eingabe F5-C03-2) wird "0" angezeigt.
PXX	Papier nachfüllen	1. Diese Anzeige blinkt, wenn kein Papier im Fach ist. 2. Bei Verwendung von ADF. • Originalgroßes Papier ist nicht im Kopierer eingelegt.
U6	Fehlfunktion der Papiereinzugsklappe	1. Die Papiereinzugklappe ist offen.
U10	U 10 ADF-Fehlfunktion	1. Der ADF wird nach dem Einlegen des Originals (der Originale) geöffnet.
U13	Tonerstanderkennung • Abschaltung des U13 Eingabe von F5-C63-0: Beliebige Taste drücken. Eingabe F5-C63-1: Papierfach-Taste und 10 Zifferntaste drücken.	1. Wenn der Tonerbehälter leer ist. 2. Tonerdichtensensor ist defekt. 3. Tonerzuführmechanismus ist defekt. 4. CPU-Leiterplatte ist defekt.
U16	Fehlfunktion der Entwicklereinheit • Wenn in der Service-Betriebsart die Entwicklereinheit nicht installiert ist erscheint "UFX" Ziffernanzeige.	1. Die Entwicklereinheit ist nicht korrekt installiert. 2. Der Stecker für die Entwicklereinheit ist nicht korrekt eingesteckt. 3. Der Stecker für die Entwicklereinheit ist defekt. 4. Die CPU-Leiterplatte ist defekt.

Papierstau



Papierstau-Lesecode (F8-C06 verwendet)	Zustand	Prüfung
J00 (FP-7715)	Papierstau (Bypass) • Wenn der Synchronwalzensensor nicht Papier innerhalb eines vorgegebenen Zeitraums nach dem Beginn des Drehens der Bypasspapierzufuhrwalze erkennt.	1. Papiertransportwalze (Bypass) ist verschlissen oder schmutzig. 2. Papiereinzugwalze ist verschlissen oder schmutzig. 3. Antriebsmechanismus der Papiereinzugstufe ist defekt. 4. Magnet ist defekt. 5. Kupplung ist defekt. 6. Magnetleitungsdraht ist kurzgeschlo ssen oder beschädigt.
J01 (FP-7715)	Papierstau (Kopierer-Papierfach) • Wenn der Synchronwalzensensor nicht Papier innerhalb eines vorgegebenen Zeitraums nach dem Beginn des Drehens der Papierzufuhrwalze erkennt.	
J02 (FP-7715)	Papierstau (Papiereinzugtisch) • Wenn der Registrierwalzensensor des Papiereinzugtisches nicht Papier innerhalb eines vorgegebenen Zeitraums nach dem Beginn des Drehens der Papierzufuhrwalze erkennt.	1. Der Hebedruck an der Papierfach-Bodenplatte ist niedrig. 2. Die Papiereinzugwalze ist verschlissen oder schmutzig. 3. Fremdkörper im Inneren der Papiereinzugstufe. 4. Der Antriebsmechanismus der Papiereinzugstufe ist defekt. 5. Registrierwalzensensor-Leitungsdraht ist kurzgeschlossen oder beschädigt. 6. Papiereinzugwalzenkupplung ist defekt. 7. Der Registrierwalzensensor ist defekt. 8. Der Papiereinzugwalzenkupplung-Leitungsdraht ist kurzgeschlossen oder beschädigt. 9. CN15 der CPU-Leiterplatte und der entsprechenden Treiber-Leiterplatte des Papier-Einzugtisches ist kurzgeschlossen oder beschädigt. 10. Die Treiber-Leiterplatte des Papiereinzugtisches ist defekt. 11. Die CPU-Leiterplatte ist defekt.
J06 (FP-7715)	Papierstau (Papiereinzugtisch) • Wenn die Hinterkante des Papiers nicht innerhalb einer vorgegebenen Zeit nach dem Erkennen der Vorderkante des Papiers erkannt wird.	
J16 (FP-7715)	Papierstau (Papiereinzugtisch) • Wenn die Registrierwalze des Papiereinzugtisches Papier erkennt, wenn der Netzschalter auf EIN geschaltet wird.	

Papierstau-Lesecode (F8-C06 verwendet)	Zustand	Prüfung
J07	Papierstau (Bypass) • Der Synchronwalzensensor erkennt das Papier nicht innerhalb einer vorbestimmten Zeit nach der Bypass-Papierwegsensor erkennt das Papier.	1. Die Bypass-Papiertransportwalze ist verschlissen oder verschmutzt. 2. DieBypass-Papiereinzugwalze ist erschlissen oder verschmutzt. 3. Der Antriebsmechanismus der Papiereinzugstation ist defekt. 4. Die Bypass-Kupplung ist defekt. 5. Unterbrechung oder Kurzschluß des Bypass-Kupplungsanschlußkabels. 6. Fremdlkörper in der Papiereinzugstation. 7. Der Bypass-Papierwegsensor ist defekt. 8. Unterbrechung oder Kurzschluß des Bypass-Papierwegsensor-Anschluß-Kabels. 9. Der Synchronwalze ist verschlissen oder verschmutzt. 10. Die Synchronwalzen kupplung ist defekt. 11. Unterbrechung oder Kurzschluß des Synchronwalzenupplungs-anschlußkabels. 12. Der Synchronwalzen-sensor ist defekt. 13. Unterbrechung oder Kurzschluß des Synchronwalzensensor-Anschluß-Kabels. 14. Die CPU-Leiterplatte ist defekt.
J08	• Die Papierhinterkante wird innerhalb einer vorbestimmten Zeit nach Registrierung der Papiervorderkante durch die Bypass-Papierwegsensor nicht registriert.	
J19	• Der Bypass-Papierwegsensor erkennt Papier beim Einschalten der Netzversorgung.	
J20	• Die Papierhinterkante wird innerhalb einer vorbestimmten Zeit nach Registrierung der Papiervorderkante durch die Synchronwalze nicht registriert.	1. Fremdkorper in der Papiereinzugstation. 2. Der Antriebsmechanismus der Papiereinzugstation ist defekt. 3. Der Synchronwalzensensor ist defekt. 4. Unterbrechung oder Kurzschluß des Synchronwalzsensensor-Anschluß-Kabels. 5. Der Synchronwalzen-kupplung ist defekt. 6. Unterbrechung oder Kurzschluß des Synchronwalzenkupplungs-anschluß-Kabels. 7. Die CPU-Leiterplatte ist defekt.
J21	• Der Synchronwalzen-sensor erkennt Papier bei Einschalten der Netzversorgung.	
J30	Papierstau (zwischen Synchronwalzensensor und Papierauslaufsensor) • Wenn der Papierauslaufsensor nicht innerhalb einer vorbestimmten Zeit nach einsetzender Drehung der Synchronwalze kein Papier erkennt.	1. Die Synchronwalze ist verschlissen oder verschmutzt. 2. Die Synchronwalzen-Andruckfeder ist zu schwach. 3. Der Antriebsmechanismus für die Synchronwalze ist defekt. 4. Die Synchronwalzen-kupplung ist defekt. 5. Unterbrechung oder Kurzschluß des Anschlußkabels der Synchronwalzen-kupplung. 6. Die Heizwalze ist verschlissen oder verschmutzt. 7. Die Andruckwalze ist verschlissen oder verschmutzt. 8. Heiz-und Andruckwalze drehen nicht. 9. Die Separationsfinger in der Fixierstation sind verschlissen oder verschmutzt. 10. Die Übertragungs-korona ist verschmutzt. 11. Die Übertragungs-korona ist nicht korrekt eingesetzt. 12. Fremdkörper in der Papiereinzugstation. 13. Der Papierauslaufsensor ist defekt. 14. Unterbrechung oder Kurzschluß des Papierauslaufsensor-Anschluß-Kabels. 15. Die CPU-Leiterplatte ist defekt.
J40	• Die Papierhinterkante wird nicht innerhalb einer vorbestimmten Zeit nach Erkennen der Papiervorderkante durch den Papierauslaufsensor erkannt.	
J41	• Der Papierauslaufsensor erkennt Papier bei Einschalten der Netzversorgung.	
J70	ADF-Stau (ADF) • Wenn ein Original im ADF gestaut ist.	

Maschinenfehler

E1: Fehler in der Optikeinheit

Code	Funktion/Ursache	Prüfung
01	Abtastfunktion der Vollschritteinheit • Wenn die Vollschritteinheit nicht den Grundstellungssensor der Vollschritteinheit innerhalb einer vorbestimmten Zeit auslöst.	1. Der Vollschritteinheitgrundstellungssensor ist defekt. 2. Der Vollschritteinheitgrundstellungssensor ist falsch angebracht. 3. Unterbrechung oder Kurzschluß an CN656-1, 2 und 3 der Optiktreiber-Leiterplatte und am Vollschritteinheitrundstellungssensor. 4. Der Antriebmechanismus für die Vollschritteinheit ist defekt. 5. Der Lampen-Abtastmotor ist defekt. 6. Der Antriebmechanismus für den Lampen-Abtastmotor ist defekt. 7. Unterbrechung oder Kurzschluß an CN660-1, 2, 3, 4, 5 und 6 der Optiktreiber-Leiterplatte und am Lampen-Abtastmotor. 8. Die Optiktreiber-Leiterplatte ist defekt.
21	Abtastfunktion der Halbschritteinheit • Wenn die Halbschritteinheit nicht den Grundstellungssensor der Halbschritteinheit innerhalb einer vorbestimmten Zeit auslöst.	1. Die Halbschritteinheitgrundstellungssensor ist defekt. 2. Die Halbschritteinheitgrundstellungssensor ist falsch angebracht. 3. Unterbrechung oder Kurzschluß an CN656-4, 5 und 6 der Optiktreiber-Leiterplatte und am Halbschritteinheitrundstellungssensor. 4. Der Antriebmechanismus für die Halbschritteinheit ist defekt. 5. Der Lampen-Abtastmotor ist defekt. 6. Der Antriebmechanismus für den Lampen-Abtastmotor ist defekt. 7. Unterbrechung oder Kurzschluß an CN660-1, 2, 3, 4, 5 und 6 der Optiktreiber-Leiterplatte und am Lampen-Abtastmotor. 8. Die Optiktreiber-Leiterplatte ist defekt.

Code	Funktion/Ursache	Prüfung
22	Abtastfunktion der Spiegeleinheit Nr.5/6 • Wenn die Spiegeleinheit Nr. 5/6 nicht den Grundstellungssensor der Spiegeleinheit Nr. 5/6 innerhalb einer vorbestimmten Zeit auslöst.	1. Die Spiegeleinheit Nr.5/6-Grundstellungs-sensor ist defekt. 2. Die Spiegeleinheit Nr.5/6-Grundstellungs-sensor ist falsch angebracht. 3. Unterbrechung oder Kurzschluß an CN659-1, 2 und 3 der Optiktreiber-Leiterplatte und am Spiegeleinheit Nr.5/6-Grundstellungssensor. 4. Der Antriebmechanismus für den Spiegeleinheit Nr.5/6 ist defekt. 5. Der Lampen-Abtastmotor ist defekt. 6. Der Antriebmechanismus für die Lampen-Abtastmotor ist defekt. 7. Unterbrechung oder Kurzschluß an CN660-1, 2, 3, 4, 5 und 6 der Optiktreiber-Leiterplatte und am Lampen-Abtastmotor. 8. Die Optiktreiber-Leiterplatte ist defekt.
23	Falsche Eingabe von F8-C02 (Meßwerteingabe zur Einstellung der Originalregistrierung)	1. Den Durchschnittsmeßwert korrekt eingeben. 2. F8-C01 und F8-C02 noch einmal einstellen.
32	Automatische Erkennung des Originalhelligkeitsgrads • Wenn das Auto-Original-helligkeit-Signal nicht erkannt wird oder wenn die Auto-Originalhelligkeit nicht gemessen werden kann.	1. Die Funktion zur automatischen Erkennung des Originalhelligkeitsgrads ist defekt. 2. CN655-1, 2 und 3 der Optiktreiber-Leiterplatte und der Sensor zur automatischen Erkennung des Originalhelligkeitsgrads sind defekt. 3. Der Magnet zur automatischen Erkennung des Originalhelligkeitsgrads ist defekt. 4. Der Mechanismus für die automatische Erkennung des Originalhelligkeitsgrads ist anormal. 5. Unterbrechung oder Kurzschluß an CN654-1 und 2 der Optiktreiber-Leiterplatte und am Magneten für die automatische Erkennung des Originalhelligkeitsgrads. 6. Die Optiktreiber-Leiterplatte ist defekt.
40	Optikkühlgebläse (A)-Motor	1. Optikkühlgebläse (A)-Motor ist defekt. 2. Antriebsmechanismus für den Optikkühlgebläse (A)-Motor ist defekt. 3. CN658-1, 2, 3 der Optiktreiber-Leiterplatte und Optikkühlgebläse (A)-Motor sind kurzbeschlossen oder schadhaft. 4. Die Optiktreiber-Leiterplatte ist defekt.
41	Optikkühlgebläse (B)-Motor	1. Optikkühlgebläse (B)-Motor ist defekt. 2. Antriebsmechanismus für den Optikkühlgebläse (B)-Motor ist defekt. 3. CN657-1, 2, 3 der Optiktreiber-Leiterplatte und Optikkühlgebläse (B)-Motor sind kurzbeschlossen oder schadhaft. 4. Die Optiktreiber-Leiterplatte ist defekt.

E2: Fehler in der Papiereinzugstation

Code	Funktion/Ursache	Prüfung
20	Bypass-Papierwegsensor • Wenn der Sensor kein EIN/AUS Signal erkennt.	1. Der Bypass-Papierwegsensor ist defekt. 2. Der Bypass-Papierwegsensorstecker ist nicht richtig eingesteckt. 3. CN24-1, 2, 3 der CPU-Leiterplatte und Bypass-Papierwegsensor sind kurzgeschlossen oder schadhaft. 4. Die CPU-Leiterplatte ist defekt.

E3: Fehler in der Entwicklerstation odder Tonereinheit.

Code	Funktion/Ursache	Prüfung
03	Tonerkonzentrations-Sensorverstärkung	1. Der Tonerkonzentrationssensor ist defekt. 2. Unterbrechung oder Kurzschluß an CN16-2 und 4. 3. Die CPU-Leiterplatte ist defekt. 4. Bei Austausch des Entwicklers wird F8-09 (Einstellung der Verstärkung des Tonerkonzentrationssensors) nicht ausgeführt.
10	Hochspannungsübertrschlag	1. Koronaüberschlag (Aufladungs-/Übertragungskorona) (verschmutzt, unterbrochen oder Fremdkörper eingedrungen) 2. Kurzschluß an CN18-4 der CPU-Leiterplatte 3. Die Koronaendblöcke sind defekt. 4. Die Hochspannungsversorgungsleiterplatte ist defekt. 5. Die CPU-Leiterplatte ist defekt.
20	Hauptmotordrehung	1. Der Hauptmotor ist defekt. 2. Der Antriebsmechanismus des Hauptmotors ist defekt. 3. Unterbrechung oder Kurzschluß an CN14-1, 2, 3, 4, 5 der CPU-Leiterplatte und am Hauptmotor. 4. Die CPU-Leiterplatte ist defekt.
22	Schwärzungsverhinderung-Film	1. Der Schwärzungsverhinderung-Filmgrundstellunggsensor ist defekt. 2. Der Antriebsmechanismus des Schwärzungsverhinderung-Filmgrundstellungssensor ist defekt. 3. Unterbrechung oder Kurzschluß an CN3 der CPU-Leiterplatte und an der Schwärzungsverhinderung-Film. 4. Die CPU-Leiterplatte ist defekt.
30	Entladelampe	1. Die Entladelampe ist unterbrochen. 2. Die Entladelampenelektrode ist locker. 3. Der Entladelampenanschlußdraht ist unterbrochen oder hat schlechten Kontakt. 4. Unterbrechung oder Kurzschluß an CN6 der CPU-Leiterplatte und an der Entladelampe. 5. Die CPU-Leiterplatte ist defekt.

E4: Fixierstationsfehler

Code	Funktion/Ursache	Prüfung
01	Fixierstation-Warmlaufbetrieb • Die Fixiertemperatur erreicht den vorgeschriebenen Wert nicht innerhalb einer vorbestimmten Zeit.	1. Der Heizstrahlerschaltkreis ist defekt oder hat schlechten Kontakt. 2. Der Fixiertemperaturthermostat ist unterbrochen. 3. Der Fixierthermistor ist unterbrochen oder hat schlechten Kontakt. 4. Der Wechselstromkabelsatz ist unterbrochen oder hat schlechten Kontakt. 5. Die CPU-Leiterplatte ist defekt. 6. Die Niederspannungsversorgung-Leiterplatte ist defekt.
10	Fixierkühlgebläsemotor • Wenn der Motor dreht, wird kein Motorsignal EIN/AUS erkannt, oder das Motorsignal EIN/AUS wird bei gestopptem Motor erkannt.	1. Fixierkühlgebläsemotor ist defekt. 2. Antriebsmechanismus für Fixierkühlgebläsemotor ist defekt. 3. Stecker für Fixier-Kühlgebläsemotor ist nicht richtig eingesteckt. 4. CN14-6, 7, 8 der CPU-Leiterplatte und Fixierkühlgebläsemotor sind kurzgeschlossen oder schadhaft. 5. Die CPU-Leiterplatte ist defekt.

E5: Systemfehler (+24V/+10V)

Code	Funktion/Ursache	Prüfung
01	Vp-Leitung (+24 V)	1. Kurzschluß an der +24-V-Leitung (Vp) 2. Unterbrechung oder Kurzschluß an CN17-1 der CPU-Leiterplatte und CN406-3 der Niederspannungsversorgungs-Leiterplatte. 3. Der +24-V-Schalter ist defekt. 4. Der Linke Abdeckungenschalter ist defekt. 5. Unterbrechung oder Kurzschluß an CN7 der CPU-Leiterplatte. 6. Die Niederspannungsversorgungs-Leiterplatte ist defekt. 7. Die CPU-Leiterplatte ist defekt.
04	Vp-Leitung (+10 V)	1. Kurzschluß an der +10-V-Leitung (Vo). 2. Unterbrechung oder Kurzschluß an CN1-1 der CPU-Leiterplatte und CN405-5 der Niederspannungsversorgung-Leiterplatee. 3. Die Niederspannungsversorgung-Leiterplatte ist defekt. 4. Die CPU-Leiterplatte ist defekt.
35	EEPROM • Übertragung und Empfang-Leitung (Daten, Latch, Stark) ist defekt.	1. Die CPU-Leiterplatte ist defekt.

	Code	Gegenstand	Funktion	(Werkseitige Einstellung)
Papierformat	81	B4/Foolscap-Formatwahl (für Europa-Modell)	0: B4-Format 1: Foolscap-Format (13 x 8 Zoll) 2: Foolscap-Format (13 x 8,5 Zoll)	0
	83	Kopierpapierformat-Einstellung (Kopierer)	0: Erstes Blatt wird mit größtem Papierformat kopiert. 1: Beim normalen Kopierer wird das Format bestimmt, wenn das Papier vor dem Kopieren durchgezogen wird. 2: A3/US-Ledger 3: B4/US-Legal/Foolscap 4: A4/US-Letter 5: A4R/US-Letter R 6: A5/US-Invoice	4
	84	Kopierpapiereinstellug (Papiereinzugtisch)	0: Erstes Blatt wird mit größtem Papierformat kopiert. 1: Beim normalen Kopierer wird das Format bestimmt, wenn das Papier vor dem Kopieren durchgezogen wird. 2: A3/US-Ledger 3: B4/US-Legal/Foolscap 4: A4/US-Letter 5: A4R/US-Letter R 6: A5/US-Invoice	4
	88	Paplerformateinstellung durch den Bediener.	0: Ja 1: Nein	0
	89	Fehlererkennung für den Optik-Lüftermotor2	0: Erkennung 1: Keine Erkennung	0

Einstellung und Programmierung in der Betriebsart F6

Code	Gegenstand	Funktion	Bemerkungen
00	Wahl von 100% (Verhältnis der vertikalen und der parallelen Positionzur Papiereinzugrichtung) (Standard: 100.7%)	Einstellung von 99,1% auf 100,9%	Maßstab kann um 0,1% (–9 bis +9) verstellt werden.
01	Nur 100% (Verhältnis der parallelen Position zur Papiereinzugrichtung)	Einstellung des Verhältnisses der Parallelposition zur Papiereinzugrichtung	Maßstab kann um 0,1% (–9 bis +9) verstellt werden.
02	100%-Fokussierung	Einstellung der Fokussierung	(–50 bis +50)
03	100%-Maßstab (Verhältnis der vertikalen Position zur Papiereinzugrichtung)	Einstellung des Verhältnisses der vertikalen Position zur Papiereinzugrichtung. (+): Vergrößern (–): Verkleinem	(–20 bis +20)
04	Originalabtastzeitsteuerung (Verkleinerungs und Vergrößerungs-kopierbetrieb)	Einstellung der Originalabtastzeitsteuerung bei Verkleinerung oder Vergrößerung (+): Registrierungszeit später (–): Registrierungszeit früher	Die Registrierungszeit-steuerung kann um 0,2 mm (–20 bis +20) verstellt werden. • Durch Einstellen des Inhalts von C02 in der Betriebsart F8 wird die werksseitige Einstellung des Inhalts von C04 in der Betriebsart F6 automatisch geändert.
05	Einstellung der Kopienvorderkante	Nach Einstellung von C04 er- folgt die Einstellung der Verzögerungszeitsteuerung durch Einschalten der Synchronwalzenkupplung. (+): Papiereinzugzeit-steuerung verzögert (–): Papiereinzugzeit-steuerung verfrüht	Die Zeitsteuerung kann-um 0,5 mm (–18 bis +20) verstellt werden. • Durch Einstellen des Inhalts von 02 in der Betriebsart F8 wird die werksseitige Einstellung des Inhalts von 05 in der Betriebsart F6 automatisch geändert.
07	Registrierungsleerbereich der Abbildung (mit LED-Leiste synchroniserter Timer)	Nach der Einstellung von C05 und C06 wird der kopierfreie Bereich eingestellt.	Der Registrierungsleerstellen-Timer kann um 0,5 mm (–18 bis +20) verstellt werden.
08	Hinterkantenzeitsteuerung der Abbildung (Verkleinerung)	Wenn das Original im Format A3 ist, wird eine Einstellung für die Vorderkante vorgenommen, die auftritt, wenn eine 65%-Kopie auf A3 Papier gemacht wird.	Die Hinterkantenregis-trierung kann um 0,5 mm (–20 bis +9) verstellt werden.
10	Schwärzungsverhinderung-Filmgrundstellung	Einstellung der Schwärzungsverhinmder-ung-Filmgrundstellung und Löschposition.	0,56 mm (–99 bis +99)
11	Belichtung (Standard = 124 Veft)	Einstellung der allgemeinen Belichtung	Die Belichtung kann um 0,4 V (–99 bis +99) verstellt werden.
12	Fotobetriebsart-Belich-tungspannungsänderung (Standard = –16,4V)	Einstellung der Fotobetriebsart-Belichtungsspannung	Die Belichtung kann um 0,8 V (–9 bis +9) verstellt werden.
13	Zoombelichtung (Verkleinerung) (65%) (Standard= +9,4V)	Bei Verkleinerungsbetrieb wird die Belichtungsspan-nung im Verhältnis zur Dif-ferenz zwischen dem Ver-kleinerungsmaßstab und dem 100%-Maßstab eingestellt.	Die Belichtung kann um 0,44 V (–9 bis +9) verstellt werden.
14	Zoombelichtung (Vergrößerung) (Standard = +10,8V)	Bei Vergrößerungsbetrieb wird die Belichtungsspan-nung im Verhältnis zur Dif-ferenz zwischen dem Ver-größerungsmaßstab und dem 100%-Maßstab eingestellt.	Die Belichtung kann um 0,32 V (200%) (–9 bis +9) verstellt werden.
15	Belichtungsspannungskor-rektur zur Konstant-lichtstärkenmessung • Dieser Code sollte nicht verändert werden.	Die Belichtungslampen-spannung wird ent-sprechend dem Ausgang des Sensors für die automatische Registrierung der Ori-ginalhelligkeit eingestellt.	Die Spannung kann um 0,4 V (–99 bis +74) verstellt werden. • Durch Einstellen des Inhalts von C03 in der Betriebsart F8 wird der Inhalt von C15 in der Betriebsart F6 automatisch eingestellt.
16	Spannungskorrektur der Belichtungslampe mit konstanter Lichtmenge • Dieser Code sollte nicht verändert werden.	Bei Einschalten der Netzversorgung wird die Belichtungslampen-spannung C15 dem Sensor zur automatischen Registrierung der Originalhelligkeit eingege-ben. Unterscheidet sich der Ermittlungswert des Sensors zur automatischen Registrierung der Originalhelligkeit vom Standardhelligkeits wert, wird die Belichtungs-lampenspannungskorrektur eingestellt. Bei Erstellen ei-ner Kopie wird diese Span-nungskorrektur hinzugefügt.	Die Spannung kann um 0,4 V (–99 bis +99) verstellt werden. • Durch Einstellen des Inhalts von C03 in der Betriebsart F8 wird der Inhalt von C16 in der Betriebsart F6 automatisch auf "0" gestellt.
17	Gitterspannung (Standard = –820V)	Einstellung der Gitterspannung (–): Heller. (+): Dunkler.	Die Spannung kann um etwa –8,3V (–44 bis +16) verstellt werden.
18	Fotobetriebsart-Gitterspan-nung (Standard = –520V)	Einstellung der Fotobetriebsart-Gitter-spannung (–): Heller. (+): Dunkler.	Die Spannung kann um etwa –8,3V (–8 bis +52) verstellt werden.
19	Biasspannung (Standard = –250V)	Einstellung der Biasspannung (–): Heller. (+): Dunkler.	Die Spannung kann um etwa –8,3V. (–36 bis +24) verstellt werden.
21	Tonerdichtensensor Verstärkungsspannung (Standard = 6V)	Einstellung der verstär-kungsspannung des Tonerkonzentrationssen-sors (nur zur Verwendung im Werk)	Hier sollten keine Einstel-lungen vorgenommen werden. • Druch Einstellen des In-halts von 09 in der Be-triebsart F8 wird die werksseitige Einstellung des Inhalts von C21 in der Betriebsart F6 automatisch geändert.
26	Prüfspannungspegel des Tonerkonzentrationssensors (Standard = 2,5V)	Einstellung der verstär-kungsspannung des Tonerkonzentrationssen-sors (nur zur Verwendung im Werk)	Hier sollten keine Einstel-lungen vorgenommen werden. • Druch Einstellen des In-halts von 09 in der Be-triebsart F8 wird die werksseitige Einstellung des Inhalts von C26 in der Betriebsart F6 automatisch geändert.
31	Fixiertemperatur **Hinwels:** Nach dem Einstellen den Netzschalter AUS und dann wieder EIN schalten.	Einstellung der Fixiertemperatur (–): Temperatur fällt. (+): Temperatur steigt.	0,7° (–15 bis +15)
32	Originalhelligkeitsspitze bei Auto-Originalhelligkeitspegel	Der Pegel wird proportional zum Unterschied zwischen Helligkeitsspitzenpegel und Normalpegel eingestellt.	Der Pegel kann in Schritten von 1% (–99 bis +99) verstellt werden.
33	Originalhelligkeits-Druch-schnitt Auto-Originalhelligkeitspegels	Der Pegel wird proportional zum Unterschied zwischen Durchschnittspegel und Normalpegel eingestellt.	
34	Originalhelligkeit (hell/dun-kel) Kontrast der Auto-Originalhelligkeit	Dieser Level dient zur Kontrast Einstellung: Dieser Pegel wird errechnet aus der maximalen/minimalen Belichtung im Verhältnis zur Standart Belichtung.	
36	Registrierung des Originals für ADF (FP-7715)	Einstellung der Registrierungs-Zeitgabe	0,65 mm (–32 bis +32)
41	Papierschlinge (Kopienkassette)	(Nur Fabrikanwendung) Diese Modus ist für die Einstellung der Länge der Schlinge vor Kopier-Synchronwalze zu verwenden. (–): wird kürzer (+): wird größer	Diese Einstellung sollte nicht gemacht werden. Die Länge der Schlinge ist auf 2,5 ms einzustellen. (–99 bis +99)
42	Papierschlinge (Bypass)		
44	Papierschleife (Papiereinzugtisch) (FP-7715)	Diese Betriebsart dient zum Einstellen der Länge der Schleife, die sich vor der Papierregistrierungswalze am Papiereinzugtisch bildet.	2,5 ms (–99 bis +99)
52	Verkleinerungsmodus-Fokus	Nachdem C02 eingestellt ist, wenn der Verkleinerungsmodus nicht fokussiert ist, geschieht diese Einstellung.	(–9 bis +9)
53	Vergrößerungsmodus-Fokus	Nachdem C02 eingestellt ist, wenn der Vergrößerungs- modus nicht fokussiert ist, geschieht diese Einstellung.	(–9 bis +9)
55	Papierschleife (Papiereinzugtisch) (FP-7715)	Diese Betriebsart dient zum Einstellen der Länge der Schleife, die sich vor dem Kopierer bildet.	2,5 ms (–99 bis +99)
56	Bildfreie Hinterkante (Kassette)	Diese Betriebsart dient zum Einstellen der bildfreien Hinterkante (–): wird größer (+): wird kürzer	Die bildfreien Hinterkante kann um 0,5 mm (–20 bis +40) verstellt werden.
57	Bildfreie Hinterkante (Bypass)		
60	Fixiertemperatur für Kondensationsverhinder-ung	Einstellung der Fixiertemperatur für Kondensationsverhinder-ung. (–): Temperatur fällt. (+): Temperatur steigt.	(–9 bis +9)
61	Hintergrund für Trommel	Zum Ausgleich des Hintergrunds beim Trommelwechsel wird die Belichtungsspannung erhöht. (–): Belichtungsspannung steigt. • Immer "0" eingeben, wenn die Trommel ausgetauscht wird. • Wenn "0" eingegeben wird, wird F7-C43 (Trommelzähler) gelöscht.	0,2V. (–9 bis + 38)
62	Tonerdichte	Diese Kompensation wird zu F6-C21 (Tonerdichtensensor-Verstärkungsspannung) hinzugefügt, um die Tonerdichtensnesor-Verstärkungsspannung einzustellen. (+): Nicht einstellen. (–): Die Tonerdichte auf hell einstellen.	0,133V (–2 bis +1)
99	Pufferspeicher	Die Kopiertaste zweimal drücken. • Zum Löschen von F6-alle Codes=0 Einstellung. • F5-C00-1 Einstellung.	—

Betriebsart F7: Elektronikzähler

Code	Gegenstand	Funktion	Bemerkungen
21	Gesamtzählung	Gesamtzählung aller er-stellten Kopien	-
22	Gesamtzählung der vor-beugenden Wartung **Hinweis:** Wenn mehr als 30.001 Kopien (z.B. F5-C70-5: 30.000 Kopien) eingegeben werden, erscheint "---" im Display.	Wartungszählung aller Ko-pien insgesamt	Bei Aufleuchten der War-tungszählung wird die War-tungszählung gelöscht.
23	Entwicler-Gesamtzählung	Dieses Register dient zm Prüfen der Kopienzahl, die mit dem momentanen Entwickler erstellt wurde.	Zur Überprüfung der mit der gleichen Entwickler station erstellten Kopien zahl in Hinblick auf eine bevorstehende Wartung nach 30.000 Kopien. • Das Register wird bei Durchführung von F8-C09 automatisch zurückgestellt.
43	Trommelzähler **Hinwels:** Wenn mehr als 2.001 Kopien (z.B. F5-C34-2: 2.000 Kopien) eingegeben werden, erscheint "---" im Display.	• Die Kopienzahl wird gezählt, und wenn die Hintergrundkompensation erreicht ist, wird der Kompensationswert F6-C61 hinzugefügt, und dieser Zähler wird gelöscht. • Der Zähler zählt auch bei F5-C34-0. Er zählt aber nur und nimmt keine Hintergrundkompensation vor.	• Wenn ein Wert in F6-C61 eingegeben wird, wird der Zählerwert gelöscht. • Wenn ein Wert in F6-C34 eingegeben wird, wird der Zählerwert gelöscht.
99	Alle Zählerinhalte löschen.	Alle Zählerinhalte sind gelöscht.	Zum Löschen der Zählerinhalte die Kopiertaste drücken.

Kopiererfunktionseinstellung in der Betriebsartart F8

Code	Gegenstand	Funktion	Bemerkungen
00	Einstellung des Belichtungslampenabdeck-ung für Belichtingslampen-einheit	beim Einstellen der Belichtungslampenabdeck-ung für die Belichtungslampeneinheit bewegt diese Funktion die Belichtungslampeneinheit in eine Position (etwa 60 mm von der Optikgrundstellung), wo sie ausgetauscht werden kann. **Bedienung:** a) Die Kopiertaste drüc-ken. Hierdurch rückt die Optikeinheit nach rechts. Zum Austausch der Belichtungslampe den Kopierer unbedingt vom Netz trennen. b) Nach dem Austausch die Löschen/Stop-Taste drücken, wo-durch die Optikeinheit wieder in die Grund-stellung zurückkehrt.	-
01	Kopie zur Einstellung der Originalregistrierung	Diese Funktion erstellt au-tomatisch sechs Kopien zur Überprüfung der Originalregistrierung bestehend aus drei 141%-Kopien und drei 65%-Kopien. **Bedienungsablauf:** a) Das Panasonic-Testblatt 54 so auf dem Auflageglas plazieren, daß dessen Registrierungsmarkie-rung kopiert werden kann. b) Die Kopiertaste drücken.	Während des Kopierens erscheint ein Flackerndes "P" in der Anzeige, wenn kein Papier eingelegt ist.
02	Meßwerteingabe für die Einstellung der Originalregistrierung	Diese Funktion mißt die mit "C01" kopierte Regi-strierung. Die Originalregi-strierung wird durch Ein-gabe des Meßwertresul-tats korridiert. **Bedienungsablauf:** a Die Kopiertaste drücken. b) Die Registrierung an-hand der drei mit "C01" erstellten 141%-Kopien messen. c) Den durchschnittlichen Meßwert dieser drei Ko-pien mit 10 multipli-zieren und das Ergebnis über die 1 Ziffern oder 10 Ziffern-Taste eingeben. (Beispiel) : 2 X 10 = 20 (Eingangs-prüfung) 0 2 4 6 8 AA_P159G0 d) Anschließend die Ko-piertaste drücken. e) Die Registrierung auf den drei mit "C01" er-stellten 65%-Kopien messen. f) Den durchschnittlichen Meßwert dieser drei Ko-pien mit 10 multiplizieren und das Ergebnis über die 1 Ziffern oder 10 Ziffern-Taste eingeben. (Beispiel) : 2 X 10 = 20 (Eingangs-prüfung) 0 2 4 6 8 g) Anschließend die Ko-piertaste drücken. Die Registrierung wird jetzt errechnet, wenn sich der Wert der 141%-Kopien mit dem der 65%-Kopien deckt. Anschlie-ßend wird der sich daraus ergebende Re-gistrierungswert gespeichert.	1. Durch diese Einstell-ung ändert sich eventuell die werksseitig Einstellung von F6-C04. Die Einstellung von F6-C04 sollte deshalb noch einmal überprüft werden. Falls eine Verän-derung eingetreten ist, den revidierten Wert auf das Speicherdatenblatt übertragen. 2. Nach Beendung dieser Einstellung F6-C05 noch einmal überprüfen.
03	Belichtungslampenspan-nung zur Messung der konstanten Lichtmenge • Diese Einstellung nach dem Austausch des Sensor zur automati-schen Erkennung der Originalhelligkeit vornehmen.	Diese Funktion stellt au-tomatisch die Belichtungs-lampenspannung zur Mes-sung der konstanten Lichtmenge ein. **Bedienung:** a) Die Belichtungslampen-spannung wird durch Drücken der Kopiertaste automatisch korrigiert.	1. Diese Einstellung kann bewirken, daß die werksseitige Einstellung F6-C15 und C16 geändert wird. Deshalb die F8-C15 Einstellung erneut prüfen. Aber F6-C16-0 ist die Einstellung. Wenn sie geändert wurde, die geänderten Werte auf das Notizblatt übertragen.
06	Maschinenfehler-und Papierstauslesung (Diese Funktion überprüft den Inhalt der Maschinenfehler- und Papierstauspeicher)	Bei jedem Drücken der Kopiertaste werden sämtliche gespeicherten Maschinenfehler-und Papierstau-Codes ihrer Speicherreihenfolge nach angezeigt. • Wenn keine Codes im Speicher vorhanden sind, erscheint 0. • Es werden maximal 10 Codes angezeigt.	1. Maschinenfehler • Bei einem Maschinenfehler-Code erscheinen abwechselnd die Anzeigen "EX" und "XX". 2. Papierstau • Ein Papierstau-Code wird durch "JXX" angezeigt. **Hinweis:** Siehe die Liste der Papierstau-Codenummern unter "2. Papierstau".
07	Löschung der Maschinenfehler- und Papierstauspeicher	Diese Funktion löscht alle über die Funktion C06 gelesenen Codes aus dem Speicher. **Bedienungsablauf:** a) Die Abruftaste drücken. b) Die Kopiertaste drücken. Hiernach sind alle gespeicherten Maschinenfehler-und Papierstau-Codes gelöscht.	-